

## EXHIBIT 6

# **Deepwater Horizon Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement**

**Abstract:** In accordance with the Oil Pollution Act of 1990 (OPA) and the National Environmental Policy Act (NEPA), the federal and state natural resource trustee agencies (Trustees) have prepared a Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (Final PDARP/PEIS). The Final PDARP/PEIS considers programmatic alternatives, composed of Restoration Types, to restore natural resources, ecological services, and recreational use services injured or lost as a result of the *Deepwater Horizon* oil spill incident. The OPA natural resource damage assessment regulations guided the Trustees' development and evaluation of programmatic restoration alternatives. The Final PDARP/PEIS also evaluates the environmental consequences of the restoration alternatives under NEPA. This document shows that the injuries caused by the *Deepwater Horizon* oil spill incident affected such a wide array of linked resources over such an enormous area that the effects must be described as constituting an ecosystem-level injury. Consequently, the Trustees' preferred alternative for a restoration plan employs a comprehensive, integrated ecosystem approach to best address these ecosystem-level injuries. Specific restoration projects, to be selected in subsequent planning phases and evaluated under OPA and NEPA, will take place primarily in the northern Gulf of Mexico, Texas, Louisiana, Mississippi, Alabama, and Florida.

**Lead Agency:** National Oceanic and Atmospheric Administration

**Cooperating Agencies:**

Texas Parks and Wildlife Department  
Texas General Land Office  
Texas Commission on Environmental Quality  
Louisiana Coastal Protection and Restoration Authority  
Louisiana Oil Spill Coordinator's Office  
Louisiana Department of Environmental Quality  
Louisiana Department of Wildlife and Fisheries  
Louisiana Department of Natural Resources  
Mississippi Department of Environmental Quality  
Alabama Department of Conservation and Natural Resources  
Natural Resources Geological Survey of Alabama  
Florida Department of Environmental Protection  
Florida Fish and Wildlife Conservation Commission  
U.S. Environmental Protection Agency  
U.S. Department of Agriculture  
U.S. Department of the Interior

**For Further Information Contact:** Courtney Groeneveld, email: [gulfspill.restoration@noaa.gov](mailto:gulfspill.restoration@noaa.gov)

**Suggested Citation:** Deepwater Horizon Natural Resource Damage Assessment Trustees. (2016). *Deepwater Horizon oil spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement*. Retrieved from <http://www.gulfspillrestoration.noaa.gov/restoration-planning/gulf-plan>

# *Deepwater Horizon* Oil Spill Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement

FEBRUARY 2016





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Silver Spring, MD 20910

FEB 11 2016

Dear Reviewer:

In 2010, the natural resources of the northern Gulf of Mexico were seriously impacted by the *Deepwater Horizon* oil spill. Since that time, the *Deepwater Horizon* natural resource Trustees have worked together to assess the injuries to natural resources in the northern Gulf of Mexico and to the services those resources provide, and to determine the restoration needed to compensate the public for these impacts. Many habitats, plants, and animals in the northern Gulf of Mexico were injured; indeed, the Trustees believe that the northern Gulf of Mexico ecosystem itself was injured.

The Trustees prepared this *Deepwater Horizon Oil Spill Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement* (Final PDARP/PEIS) in accordance with the Oil Pollution Act (OPA) and the National Environmental Policy Act of 1969 (NEPA). The Trustees solicited public comment on the Draft PDARP/PEIS and have considered the extensive public comments received in preparing this Final PDARP/PEIS. The document presents the Trustees' injury assessment and proposed restoration plan and considers the environmental impacts of the proposed restoration and alternatives to that restoration. The Trustees propose to select a comprehensive, integrated ecosystem restoration plan for implementation. The Final PDARP/PEIS is programmatic; it describes the framework by which subsequent project-specific restoration plans will be identified and developed during the coming decades.

We are the NOAA responsible officials for the Final PDARP/PEIS:

David G. Westerholm  
Director, Office of Response and Restoration  
National Ocean Service  
National Oceanic and Atmospheric Administration  
1305 East-West Highway  
Silver Spring, MD 20910

Samuel D. Rauch III  
Deputy Assistant Administrator for Regulatory Programs  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration  
1315 East-West Highway  
Silver Spring, MD 20910

The full text of the Final PDARP/PEIS is available at [www.gulfspillrestoration.noaa.gov](http://www.gulfspillrestoration.noaa.gov). For questions regarding obtaining these documents you may contact Courtney Groeneveld, National Marine Fisheries Service, Office of Habitat Conservation by email at [gulfspill.restoration@noaa.gov](mailto:gulfspill.restoration@noaa.gov).



On behalf of the Trustees and as approved by the Trustees in the attached resolution, we are pleased to submit this document for filing with the EPA and for noticing of availability to the public. As provided for in NEPA and OPA implementing regulations, the Trustees will not make a final decision to adopt a programmatic restoration alternative until 30 days or more after EPA publishes the Notice of Filing and NOAA publishes the Notice of Availability in the Federal Register.

Sincerely,



Samuel D. Rauch, III  
Designated NOAA NEPA Coordinator  
Deputy Assistant Administrator for  
Regulatory Programs  
National Marine Fisheries Service



David G. Westerholm  
Director, Office of Response and Restoration  
National Ocean Service

Enclosure

Deepwater Horizon Oil Spill Natural Resource Trustees Resolution 16-2

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*DWH Natural Resource Trustees Resolution 16-2*  
ADOPTED February 9, 2016

**A RESOLUTION OF THE DEEPWATER HORIZON OIL SPILL NATURAL RESOURCE TRUSTEES TO APPROVE FOR FILING WITH THE EPA AND FOR NOAA'S NOTICING OF AVAILABILITY THE "FINAL PROGRAMMATIC DAMAGE ASSESSMENT AND RESTORATION PLAN AND FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT"**

The undersigned representatives of the *Deepwater Horizon* Oil Spill Natural Resource Trustees (Trustees) hereby approve for filing with the U.S. Environmental Protection Agency (EPA) the "Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement" ("Final PDARP/PEIS") pursuant to 40 C.F.R. §1506.9. The PDARP/PEIS was prepared in accordance with the Oil Pollution Act of 1990 (OPA) and the National Environmental Policy Act (NEPA). The Final PDARP/PEIS that is the subject of this resolution was provided to the Trustees through an e-mail dated February 5, 2016, and titled "Final PDARP/PEIS for TC Review." The "Final PDARP/PEIS" includes summaries of public comments and responses to public comments as required by the Council on Environmental Quality's (CEQ) NEPA regulations and the OPA regulations. Under the requirements of CEQ regulations at 40 C.F.R. §1506.10 (a), the EPA will provide notice of making the Final PDARP/PEIS available to the public. Under the requirements of the OPA regulations at 15 C.F.R. §990.23(c)(2)(ii)(E), the National Oceanic and Atmospheric Administration (NOAA), on behalf of the Trustees, will also file a Notice of Availability of the Final PDARP/PEIS with the Federal Register. As provided by 40 C.F.R. §1506.10(b)(2) and the OPA regulations, the Trustees will not make a final decision to adopt a programmatic restoration alternative (the proposed action) set forth in the Final PDARP/PEIS until 30 days or more after the EPA publishes the Notice of Filing and NOAA publishes the Notice of Availability in the Federal Register.

**SIGNATURES ON FOLLOWING PAGES:**

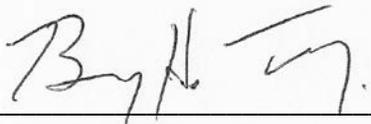
Deepwater Horizon Oil Spill Natural Resource Trustees Resolution 16-2  
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FOR THE STATE OF ALABAMA:



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Alabama Department of Conservation and Natural Resources  
Commissioner



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State Geologist/Oil & Gas Supervisor

FOR THE STATE OF FLORIDA:



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Deepwater Horizon Oil Spill Natural Resource Trustees Resolution 16-2  
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FOR THE STATE OF MISSISSIPPI:

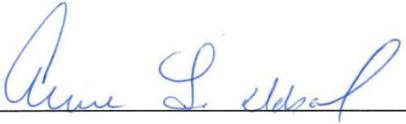


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Executive Director

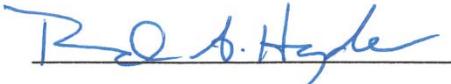
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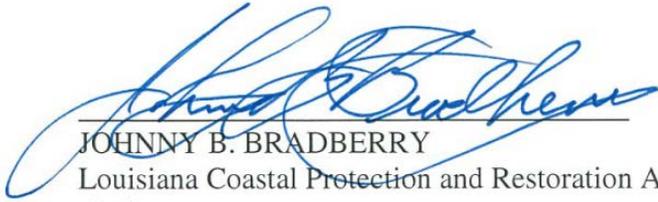


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Texas Commission on Environmental Quality  
Executive Director

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FOR THE STATE OF LOUISIANA:



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JOHNNY B. BRADBERRY

Louisiana Coastal Protection and Restoration Authority  
Chairman



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BRIAN WYNNE

Louisiana Oil Spill Coordinator's Office  
Director



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CHUCK CARR BROWN, Ph.D

Louisiana Department of Environmental Quality  
Secretary



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CHARLES J. MELANCON

Louisiana Department of Wildlife and Fisheries  
Secretary



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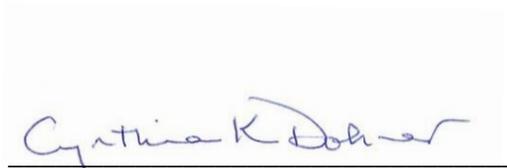
THOMAS F. HARRIS

Louisiana Department of Natural Resources  
Secretary

Deepwater Horizon Oil Spill Natural Resource Trustees Resolution 16-2

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FOR THE UNITED STATES:



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Deepwater Horizon Authorized Official  
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U.S. Environmental Protection Agency  
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Deputy Under Secretary for Natural Resources and Environment

## 1. Introduction and Executive Summary

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# 1. Introduction and Executive Summary

## What Is in This Chapter?

- **Deepwater Horizon Incident (Section 1.1):** What is the *Deepwater Horizon* incident, and under what authority was this document prepared in response to that incident?
- **Deepwater Horizon Trustees (Section 1.2):** Who are the *Deepwater Horizon* Trustees?
- **Authorities and Requirements (Section 1.3):** What authorities and requirements govern preparation of this document, and why did the Trustees decide to take a programmatic, rather than project-specific, approach?
- **The Natural Resource Damage Assessment Process (Section 1.4):** What is the natural resource damage assessment process the Trustees have followed, and what Emergency and Early Restoration has already been implemented?
- **Summary of This Final PDARP/PEIS (Section 1.5):** In brief: How did the Trustees conduct the injury assessment and what were the key findings? How did the Trustees develop the restoration plan, what are the proposed alternatives and their environmental impacts, and which alternative do the Trustees prefer? How will restoration be governed, and how will the Trustees coordinate with other restoration efforts?
- **Proposed Settlement and PDARP Decision (Section 1.6):** What is the proposed settlement with BP, what is the related decision in this Final PDARP, and why do the Trustees believe these are appropriate?
- **Public Involvement in Restoration Planning (Section 1.7):** How has the public been involved in restoration planning and what happens next?
- **Overview of Public Comments on the Draft PDARP/PEIS and Key Changes in the Final PDARP/PEIS (Section 1.8):** What comments did the public provide on the draft document, and how did the Trustees consider those comments in this final document? What other types of changes have the Trustees made to this document since the draft was released in October 2015?
- **References (Section 1.9)**

## 1.1

### Deepwater Horizon Incident

## 1.1 *Deepwater Horizon* Incident

On April 20, 2010, the *Deepwater Horizon* (DWH) mobile drilling unit exploded, caught fire, and eventually sank in the Gulf of Mexico (Figure 1.1-1), resulting in a massive release of oil and other substances from BP's Macondo well. Tragically, 11 workers were killed and 17 injured by the explosion and fire. Initial efforts to cap the well following the explosion were unsuccessful, and for 87 days after the explosion, the well continuously and uncontrollably discharged oil and natural gas into the northern Gulf of Mexico. Approximately 3.19 million barrels (134 million gallons) of oil were



Source: U.S. Coast Guard (USCG 2011).

**Figure 1.1-1.** *Deepwater Horizon* offshore drilling unit on fire.

released into the ocean (U.S. v. BP et al. 2015), by far the largest offshore oil spill in the history of the United States. The volume of oil discharged during the *Deepwater Horizon* spill was equivalent to the *Exxon Valdez* oil spill re-occurring in the same location every week for 12 weeks.

Oil spread from the deep ocean to the surface and nearshore environment, from Texas to Florida. The oil came into contact with and injured natural resources as diverse as deep-sea coral, fish and shellfish, productive wetland habitats, sandy beaches, birds, endangered sea turtles, and protected marine life (Figure 1.1-1). The oil spill prevented people from fishing, going to the beach, and enjoying their typical recreational activities along the Gulf of Mexico.<sup>1</sup> Extensive response actions, including cleanup activities and actions to try to prevent the oil from reaching sensitive resources, were undertaken to try to reduce harm to people and the environment. However, many of these response actions had collateral impacts on the environment. The oil and other substances released from the well in combination with the extensive response actions together make up the *Deepwater Horizon* oil spill incident.

Unprecedented in both scope and nature, the *Deepwater Horizon* oil spill was the largest offshore oil spill in U.S. history. The spill dealt a heavy blow to the Gulf Coast region natural resources and its natural resource-dependent economy.

As an oil pollution incident, the *Deepwater Horizon* spill was subject to the provisions of the Oil Pollution Act (OPA) of 1990<sup>2</sup>, which addresses preventing, responding to, and paying for oil pollution incidents in navigable waters, adjoining shorelines, and the exclusive economic zone of the United States. Under the authority of OPA, a council of federal and state “Trustees” was established (see Section 1.2), on behalf of the public, to assess natural resource injuries resulting from the incident and work to make the environment and public whole for those injuries. As required under OPA, the Trustees have conducted a natural resource damage assessment (NRDA) and prepared this document, which describes the Trustees’ injury assessment and proposed restoration plan. A draft of this document was made available for public review and comment, and the Trustees considered public comments when preparing this Final PDARP/PEIS. See the text box at the end of this chapter for details about how this document is organized.

<sup>1</sup> This document is concerned with impacts to the public’s natural resources and the services provided by those resources, such as recreation. It does not discuss economic harm to private parties and governments caused by the *Deepwater Horizon* spill.

<sup>2</sup> Oil Pollution Act (OPA) of 1990 (33 USC §§ 2701 *et seq.*)

## 1.1

### Deepwater Horizon Incident



*Sources* (clockwise from top left): Hsing et al. (2013); International Bird Rescue Center; NOAA; Tomo Hirama; NOAA; Louisiana Department of Wildlife and Fisheries/Mandy Tumlin; NOAA.

**Figure 1.1-1.** Examples of resources affected by the *Deepwater Horizon* incident (clockwise from top left): injured coral, oiled brown pelicans, dolphins swimming through oil, oiled Kemp's ridley turtle, oiled coastal wetlands, dolphin in oil, and oil on a beach.

## 1.2 Deepwater Horizon Trustees

The *Deepwater Horizon* Trustees are the government entities authorized under OPA to act as trustees on behalf of the public to 1) assess the natural resource injuries resulting from the *Deepwater Horizon* oil pollution incident, and then 2) develop and implement a restoration plan to compensate for those injuries. To work collaboratively on the NRDA, the *Deepwater Horizon* Trustees organized a Trustee Council (the Council) comprising representatives of the U.S. Department of Commerce; the U.S. Department of the Interior (DOI); the U.S. Environmental Protection Agency (EPA); the U.S. Department of Agriculture (USDA);<sup>3</sup> and designated agencies representing each of the five Gulf states: Florida, Alabama, Mississippi, Louisiana, and Texas (Figure 1.2-1).

Under OPA, designated Trustees may seek compensation for lost or injured natural resources through restoration.



**Figure 1.2-1.** *Deepwater Horizon* NRDA Trustee Council and representing agencies.

<sup>3</sup> The federal Trustees are designated pursuant to section 2706(b)(2) of OPA (33 U.S.C. 2706(b)(2)) and by Executive Order 12777 (1991); Executive Order 13158 (2000); and Executive Order 13626 (2012). Although a Trustee under OPA by virtue of the proximity of its facilities to the *Deepwater Horizon* oil spill, the U.S. Department of Defense (DOD) is not a member of the Trustee Council and did not participate in development of this PDARP/PEIS.

## 1.3 Authorities and Requirements

As described below, this document simultaneously fulfills requirements under two pertinent regulatory authorities: the Oil Pollution Act of 1990 (OPA) and the National Environmental Policy Act (NEPA).

### 1.3.1 Oil Pollution Act

The primary goal of OPA is to make the environment and public whole for injuries to natural resources and services resulting from an incident involving an oil discharge (or substantial threat of an oil discharge). OPA makes each party responsible for a vessel or facility from which oil is discharged, or which poses the substantial threat of a discharge, liable (among other things) for removal costs and for damages for injury to, destruction of, loss, or loss of use of, natural resources, including the reasonable cost of assessing the damage. Under OPA regulations,<sup>4</sup> the natural resource injuries for which responsible parties are liable include injuries resulting from the oil discharge and those resulting from response actions or substantial threat of a discharge. OPA specifies that trustees responsible for representing the public's interest (in this case, state and federal agencies) must be designated to act on behalf of the public to assess the injuries and to address those injuries. The *Deepwater Horizon* Trustees ("the Trustees") for the affected natural resources conducted a natural resource damage assessment to:

- Assess the impacts of the *Deepwater Horizon* oil spill on natural resources in the Gulf of Mexico and the services those resources provide.
- Determine the type and amount of restoration needed to compensate the public for these impacts.

In this document (*Deepwater Horizon* Oil Spill Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement [Final PDARP/PEIS]), which serves as the Damage Assessment and Restoration Plan (DARP) under OPA, the Trustees present to the public their findings on the extensive injuries (Chapter 4) to multiple habitats, biological species, ecological functions, and geographic regions across the northern Gulf of Mexico that occurred as a result of the *Deepwater Horizon* oil spill, as well as their programmatic plan for restoring those resources (Chapter 5).

As this document shows, the injuries caused by the *Deepwater Horizon* spill cannot be fully described at the level of a single species, a single habitat type, or a single region. Rather, the injuries affected such a wide array of linked resources over such an enormous area that the effects of the *Deepwater Horizon* spill must be described as constituting an ecosystem-level injury. Consequently, the Trustees' preferred alternative for a restoration plan employs a comprehensive, integrated ecosystem approach to best address these ecosystem-level injuries. The Trustees' full injury assessment and

The injuries from the *Deepwater Horizon* incident affected such a wide array of linked resources over such an enormous area that the effects of the spill must be described as constituting an ecosystem-level injury.

<sup>4</sup> The OPA regulations can be found at 15 CFR Part 990.

resulting restoration plan were informed by reasonable scientific inferences about the extent of injury and about the resource benefits that can be derived from broad-scale ecosystem restoration.

Given the ecosystem-level nature of the injuries, the Trustees decided to prepare a *programmatic* DARP—in other words, a DARP that provides long-term direction for restoring the full suite of injured natural resources and services. Instead of identifying specific restoration projects, the PDARP provides direction and guidance for identifying, evaluating, and selecting future restoration projects to be carried out by Trustee implementation groups (Section 5.10.4 and Chapter 7).

This Final Programmatic Damage Assessment and Restoration Plan (PDARP) provides long-term direction and guidance for restoring injured natural resources and services caused by the *Deepwater Horizon* oil spill.

### 1.3.2 National Environmental Policy Act Requirements

OPA regulations require federal trustees to comply with National Environmental Policy Act<sup>5</sup> regulations when planning restoration. NEPA requires federal agencies to consider the potential environmental impacts of planned actions. NEPA provides a mandate and framework for federal agencies to determine if their proposed actions have significant environmental effects and related social and economic effects, consider these effects when choosing between alternative approaches, and inform and involve the public in their environmental analysis and decision-making process.

NEPA requires federal agencies to develop an environmental impact statement (EIS) for any “major federal action significantly affecting the quality of the human environment.” The EIS typically has several parts:

- A statement of the purpose and need for the proposed action.
- A description of the environment that could be affected (for example: What habitats and species are present? Are any threatened or endangered?).
- A description of the proposed action and a set of alternatives.
- An analysis of the direct, indirect, and cumulative environmental impacts of each alternative.

In this document, the Trustees address these requirements by providing a *programmatic* EIS (PEIS) that evaluates broad (as opposed to project-specific) restoration alternatives. Consequently, while serving as a PDARP under OPA, this document also serves as a PEIS under NEPA. In Section 5.5, the Trustees propose a preferred restoration alternative for comprehensive integrated ecosystem restoration that they judge as best, among several other alternatives (Section 5.9), at compensating the public for the losses to natural resources and services caused by the *Deepwater Horizon* spill. The identification of a preferred alternative is informed by consideration and comparison of the environmental consequences of the alternatives under NEPA in Section 6.5.

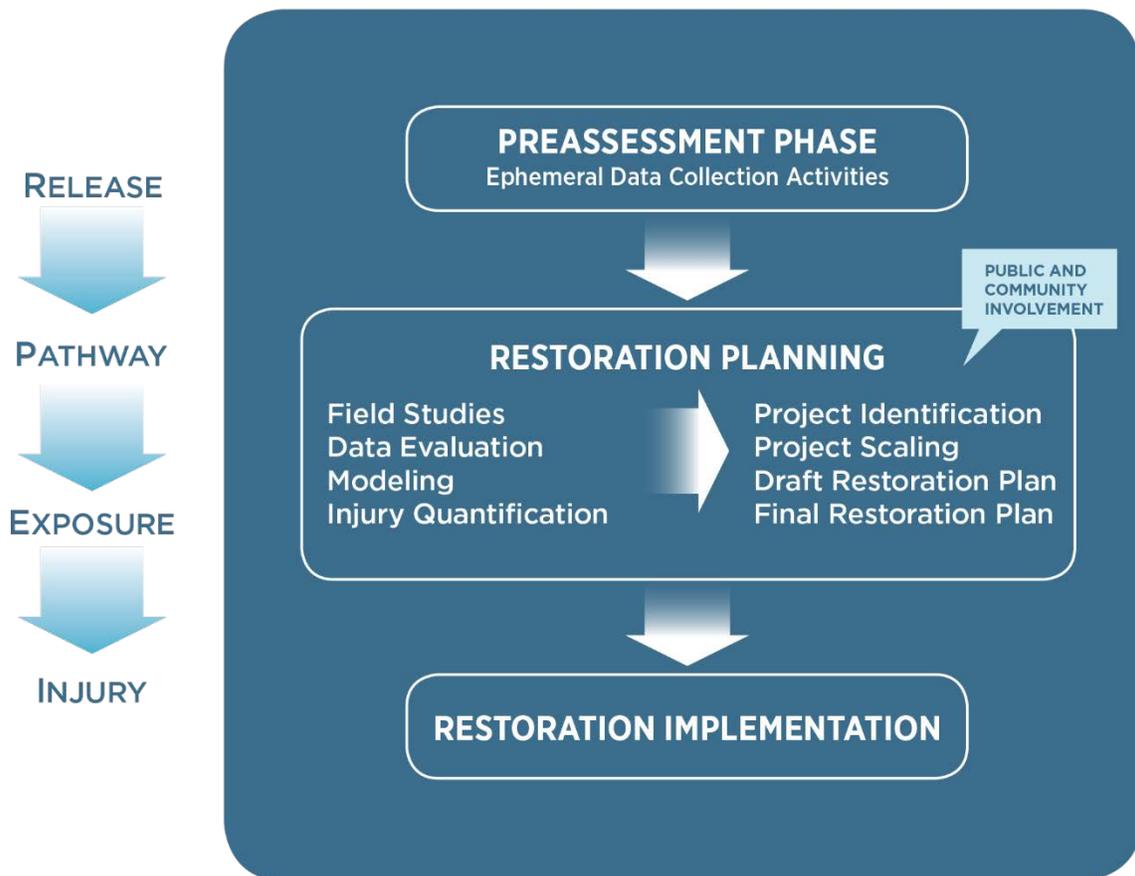
<sup>5</sup> See 42 USC § 4321 *et seq.*, and the regulations guiding NEPA implementation at 40 CFR § 1500 *et seq.*

This programmatic document describes the process for subsequent restoration planning to select specific projects for implementation. The subsequent restoration plans will be consistent with this PDARP and integrated with a NEPA analysis tiered from this PEIS. A tiered environmental analysis is a project-specific analysis that focuses on project-specific issues, and summarizes or references (rather than repeats) the broader issues discussed in the PEIS. This process may include formal public scoping (i.e., if a tiered EIS is required) to fulfill federal agencies' NEPA responsibilities.

**1.3**  
Authorities and  
Requirements

## 1.4 The Natural Resource Damage Assessment Process

Under OPA (15 CFR § 990.10), trustees with jurisdiction over resources threatened or affected by an oil release may conduct a NRDA to determine whether natural resources have been injured and then plan restoration to address those injuries. The OPA regulations lay out a process for conducting an NRDA that includes three main phases (Figure 1.4-1). The *Deepwater Horizon* Trustees have been proceeding with this NRDA process but have also included additional steps, such as Early Restoration. In addition, this Final PDARP/PEIS has been prepared as a programmatic document as part of the restoration planning phase. Subsequent project-specific restoration planning will occur prior to restoration implementation. The three main phases of the NRDA are described briefly below.



**Figure 1.4-1.** Simplified overview of NRDA process according to OPA regulations.

### 1.4.1 Preassessment Phase

During this phase, trustees determine whether an oil spill incident is likely to have injured natural resources or their services, and whether it is appropriate to undertake restoration. If so, the trustees invite the potentially responsible parties to participate in the NRDA and restoration planning.

Shortly after the *Deepwater Horizon* oil spill, the Trustees initiated the preassessment phase (pursuant to 15 CFR §§ 990.40–990.45). By August 19, 2010, Trustee scientists had already observed impacts from the spill, including, but not limited to, oil impacts across over 1,300 miles (2,100 kilometers) of shoreline habitat; visibly oiled and dead birds, sea turtles, and marine mammals; lost recreational opportunities; and impacts to water column resources. These initial data showed that the spill’s geographic scale was unprecedented and the scope of likely injuries to natural resources was vast.

### Joint Studies with BP

The Trustees invited all responsible parties to participate in the NRDA process; only BP chose to do so. Under a cooperative agreement with BP for the NRDA process, the Trustees conducted many joint studies with BP.

Based on these data and the spill’s long duration, the Trustees determined that they had the authority to pursue restoration under OPA. They developed and published a Notice of Intent to Conduct Restoration Planning (DWH Trustees 2010),<sup>6</sup> which notified the public of this decision. Pursuant to OPA regulations (15 CFR § 990.14), the Trustees also sent this Notice of Intent to the potentially responsible parties<sup>7</sup> and invited the parties to participate in the NRDA as part of a cooperative process. Of the responsible parties, only BP chose to participate in the NRDA and enter into a cooperative assessment process with the Trustees. Under this arrangement, BP and the Trustees conducted joint studies to collect data.

Even under a cooperative NRDA process, the authority and responsibility to assess natural resource injuries and losses and define appropriate restoration plans rest solely with the trustees. Thus, the Trustees are the sole author of this Final PDARP/PEIS.

## 1.4.2 Restoration Planning

During the restoration planning phase, trustees assess and quantify potential injuries and lost services and use that information to determine the need for restoration actions. For the *Deepwater Horizon* NRDA, the Trustees conducted two coordinated processes during this phase: injury assessment and restoration planning.

- **Injury assessment.** The purpose of injury assessment is to determine the nature and extent of injuries to natural resources and services from an oil spill. Under the *Deepwater Horizon* injury assessment process, conducted from 2010 through 2015 (and including the work conducted as part of the preassessment process), the Trustees developed and implemented hundreds of

<sup>6</sup> Notice of Intent, 75 FR 60800, Discharge of Oil From *Deepwater Horizon*/Macondo Well, Gulf of Mexico; Intent to Conduct Restoration Planning (<https://federalregister.gov/a/2010-24706>); Notice of Intent, 36 La. Reg. 2441-43 (October 20, 2010), Restoration Planning—Discharge of Oil From the *Deepwater Horizon* Mobile Offshore Drilling Unit and the Subsea Macondo Well into the Gulf of Mexico, April 20, 2010 (<http://www.doa.louisiana.gov/osr/reg/1010/1010.pdf>).

<sup>7</sup> Potentially responsible parties identified in the Notice of Intent to Conduct Restoration Planning were BP Exploration and Production, Inc.; Transocean Holdings, Inc.; Triton Asset Leasing, GmbH; Transocean Offshore Deepwater Drilling, Inc.; Transocean Deepwater, Inc.; Anadarko Petroleum; Anadarko E&P Company, LP; and MOEX Offshore 2007, LLC (DWH Trustees 2010).

scientific studies<sup>8</sup> to assess the impacts of the *Deepwater Horizon* oil spill on natural resources and habitats, as well as lost human recreational uses of these resources and habitats. BP and the Trustees cooperatively developed sampling protocols for certain studies. When they did not reach agreement on sampling protocols, both BP and the Trustees conducted independent (i.e., non-cooperative) studies.

- **Restoration planning.** Informed by the injury assessment, the Trustees have developed programmatic restoration alternatives (described in Chapter 5). The Trustees' comprehensive restoration planning work to date has included public scoping to identify appropriate types of restoration; identification and evaluation of alternatives to offset injuries to diverse resources and habitats; evaluation of alternatives under NEPA and OPA; and development of monitoring approaches to better understand the benefits (both qualitative and quantitative) of restoration actions. Chapter 5 of this Final PDARP/PEIS presents the programmatic restoration plan developed by the Trustees and evaluates alternatives in accordance with OPA. Chapter 6 evaluates the alternatives in accordance with NEPA.

### Phased Restoration

**Emergency/early.** Due to the magnitude of the spill, the Trustees began implementing Emergency and Early Restoration work before the injury assessment was complete.

**Long-term.** As a programmatic document, this Final PDARP/PEIS provides long-term direction and guidance that will be used to propose specific future actions for restoring injured natural resources and services.

## 1.4.3 Restoration Implementation

Due to the magnitude of the spill, the Trustees began planning for and implementing Emergency and Early Restoration projects (described below) with funding from BP before the injury assessment was complete. These actions are a subset of the extensive, continuing effort needed to address complete restoration of injured resources.

Once this programmatic restoration planning is complete, the Trustees will, per OPA requirements, develop and solicit public comment on subsequent project-specific restoration plans (integrated with an analysis under NEPA), which will include associated monitoring and performance criteria. Subsequent plans and projects will be consistent with this Final PDARP/PEIS. Once these plans are final, the Trustees will implement the projects in compliance with environmental laws.

### 1.4.3.1 Emergency Restoration

Under OPA, Trustees may take emergency primary restoration actions before completing the NRDA process to minimize continuing injury, or prevent additional injury, as long as the actions are feasible and the costs not unreasonable. Guided by preliminary data about resource impacts from the

<sup>8</sup> These studies have been subject to formal and informal peer review, both within Trustee agencies, by BP scientists (for cooperative studies), and by independent scientists.

*Deepwater Horizon* spill, the Trustees collectively selected and implemented three types of Emergency Restoration in response to the spill (NOAA 2013):

- **Submerged aquatic vegetation (SAV).** The Trustees implemented Emergency Restoration to prevent additional injury to and restore SAV beds damaged by propeller scarring and other response vessel impacts. The Trustees assessed SAV damage in multiple locations across the Gulf of Mexico and ultimately selected sites in Florida that best met the Emergency Restoration criteria.
- **Waterfowl and shorebirds.** The Trustees provided alternative wetland habitat in Mississippi for waterfowl and shorebirds that might otherwise winter in oil-affected habitats.
- **Sea turtles.** The Trustees conducted a project to improve the nesting and hatching success of endangered sea turtles on the Texas coast, including Padre Island National Seashore.

Some Trustees also independently implemented additional Emergency Restoration actions.

#### 1.4.3.2 Early Restoration

For the *Deepwater Horizon* spill, Early Restoration was intended to accelerate restoration of injured natural resources and their services, but not to fully compensate the public for all resulting injuries and losses. On the first anniversary of the spill (April 20, 2011), the Trustees and BP agreed that BP would provide up to \$1 billion toward Early Restoration projects, under the terms of a Framework Agreement for Early Restoration (“the Framework Agreement”),<sup>9</sup> as a preliminary step toward restoring injured natural resources and services caused by the spill. Early Restoration proceeded in phases, with each phase adding additional projects to partially address injuries to nearshore resources, birds, fish, sea turtles, federally managed lands, and recreational uses. Injuries were partially addressed through coastal habitat restoration, resource-specific restoration, and education and recreational infrastructure projects.

**Early Restoration projects** are aimed at accelerating meaningful restoration while also contributing to knowledge required for long-term restoration planning.

Sixty-five projects with a total cost of approximately \$877 million have been selected through the five phases of Early Restoration planning (DWH Trustees 2012a, 2012b, 2014, 2015). Chapter 5 provides further details on Early Restoration. The balance of funding originally pledged for Early Restoration has been incorporated into the proposed settlement described in Section 1.6.

<sup>9</sup> The Framework Agreement can be found at <http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/2011/05/framework-for-early-restoration-04212011.pdf>. Accessed July 7, 2015.

## 1.5 Summary of This Final PDARP/PEIS

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This section provides a brief summary of the injury assessment and restoration planning sections of this Final PDARP/PEIS, including an overview of the approach the Trustees took to the assessment, key findings of the injury assessment, a summary of the programmatic restoration plan, a summary of the NEPA evaluation of restoration, an overview of Trustee governance of restoration implementation, and a discussion of coordination with other *Deepwater Horizon* restoration planning efforts.

### 1.5.1 Approach to the Injury Assessment

The scale of the *Deepwater Horizon* spill was unprecedented, both in terms of the area affected and the duration of the spill. Due to the enormous scope of this incident, evaluation of all potentially injured natural resources in all potentially oiled locations at all times remains cost-prohibitive and scientifically impractical. The Trustees therefore undertook an ecosystem approach to injury assessment that included the evaluation of representative habitats, ecosystem processes and linkages, ecological communities, specific natural resources, and human services.

The Trustees conducted a detailed assessment to determine the nature, degree, geographic extent, and duration of injuries from the *Deepwater Horizon* incident. This information was then used in the restoration planning process to inform the type and amount of restoration appropriate to address these injuries.

The Trustees began to assess injuries as soon as news of the spill was received, and they continued with a multi-phased iterative approach, in which planning and design decisions were informed by the data that had already been collected and evaluated. The Trustees used a variety of methods, including field and laboratory studies and models. They used scientific inference to make informed conclusions about injuries that they were not able to study directly.

The injury assessment involved two main steps: **injury determination** and **injury quantification**.

#### 1.5.1.1 Step 1: Injury Determination

In this step, the Trustees evaluated whether the *Deepwater Horizon* incident injured natural resources or impaired their ability to provide services. This part of the assessment basically involves answering the following questions:

1. Can a **pathway** be established from the discharge to the exposed resource? This step involved confirming the sequence of events that resulted in oil being transported from BP's Macondo well to the locations where injuries occurred.
2. Did **exposure** take place? This step involved confirming that the injured resources were indeed exposed to *Deepwater Horizon* oil.
3. What **injuries** (i.e., adverse effects) occurred as a result of the exposure and/or response activities?

### 1.5.1.2 Step 2: Injury Quantification

In this step, the Trustees determined the degree (severity), geographic extent, and temporal extent (amount of time) of the injuries and service losses that occurred. To do this, the Trustees compared the injured resources and services with baseline conditions—that is, the condition that would have existed if the *Deepwater Horizon* incident had not occurred. The Trustees could not quantify every injury that occurred. Instead, they focused on where injury quantification could be most helpful for restoration planning.

Because of the vast scale of the incident and potentially affected resources, the Trustees evaluated injuries to a set of representative habitats, communities, species, and ecological processes. Studies were conducted at many scales, including the cellular, individual, species, community, and habitat levels. The Trustees generally did not quantify changes in the population size or status of plants and animals, because natural variability from year to year can make it difficult to detect oil spill impacts at the population level. They also did not limit their quantification to counts of animals killed by the spill, because so many of the animals killed were not observed.

### 1.5.2 Key Findings of the Injury Assessment

Key findings of the injury assessment are listed below. Figure 1.5-1 depicts the major categories of injury from the *Deepwater Horizon* incident, along with the corresponding sections of this Final PDARP/PEIS where findings are presented in detail. A detailed summary of findings is also presented in Section 4.11.

- The Trustees documented that oil flowed within deep ocean water currents hundreds of miles away from the blown-out well; and that it moved upwards and across a very large area of the ocean surface. This movement resulted in observable slicks that extended over 43,300 square miles (an area about the size of the State of Virginia), affecting water quality and exposing aquatic biota. Oil was deposited onto at least 400 square miles of the sea floor and washed up onto more than 1,300 miles of shoreline from Texas to Florida.
- The oil came into contact with and injured natural resources as diverse as deep-sea corals, fish and shellfish, productive wetland habitats, sandy beaches, birds, endangered sea turtles, and protected marine life. The oil spill prevented people from fishing, going to the beach, and enjoying their typical recreational activities along the Gulf of Mexico. Extensive response actions, including cleanup activities and actions to try to prevent the oil from reaching sensitive resources, were undertaken to try to reduce harm to people and the environment. However, many of these response actions had collateral impacts on the environment.
- The oil released into the environment by the *Deepwater Horizon* incident was toxic to a wide range of organisms, including fish, invertebrates, plankton, birds, turtles, and mammals. It caused a wide array of toxic effects, including death, disease, reduced growth, impaired reproduction, and physiological impairments that made it more difficult for organisms to survive and reproduce.
- The waters, sediments, and marsh habitats in many locations in the northern Gulf of Mexico had concentrations of oil that were high enough to cause toxic effects. The degree and extent of

these toxic concentrations varied by location and time. The extent and degree of toxic levels of oil has declined substantially from 2010 to the present.

- Exposure to oil and response activities resulted in extensive injuries to multiple habitats, species, and ecological functions, across broad geographic regions.
- The *Deepwater Horizon* incident resulted in injuries to intertidal marsh habitats, including marsh plants and associated organisms; shoreline beaches and sediments, and organisms that live on and in the sand and sediment; fish and shellfish and other invertebrates that live in the water; a wide range of bird species; floating *Sargassum* habitats offshore and submerged aquatic vegetation; deep-sea and nearshore ocean-bottom habitats, including rare, deep water corals; endangered and threatened sea turtles; and several species of dolphins and whales.
- The spill directly reduced the use of popular recreational activities including boating, fishing, and going to the beach between May 2010 and November 2011.
- Overall, the ecological scope of impacts from the *Deepwater Horizon* incident was unprecedented, with injuries affecting a wide array of linked resources across the northern Gulf ecosystem.

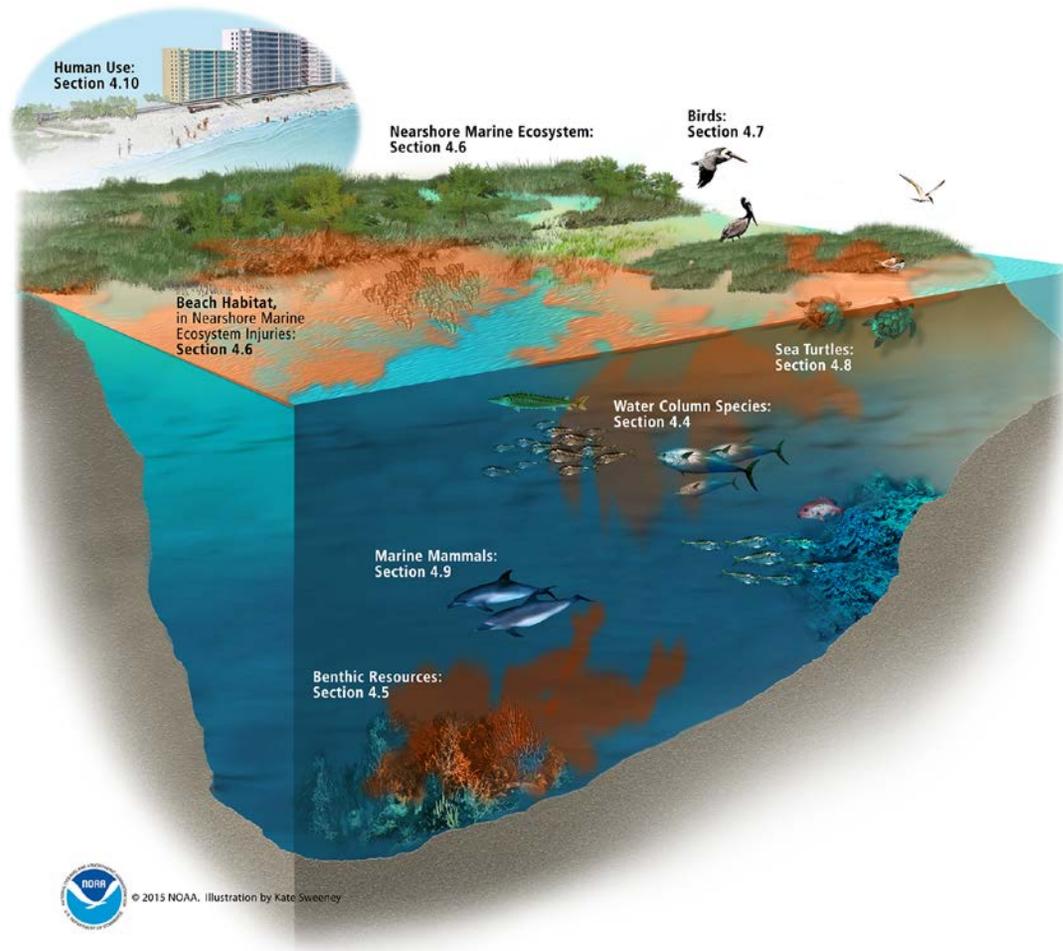
### 1.5.3 Restoring Natural Resources

Given the broad ecological scope of the injuries, restoration planning similarly requires a broad ecosystem perspective to restore the vast array of resources and services injured by the *Deepwater Horizon* incident. Thus, the Trustees are proposing a comprehensive, integrated ecosystem restoration plan with a portfolio of Restoration Types that address the diverse suite of injuries that occurred at both regional and local scales. The Trustees developed this plan after carefully reviewing the available scientific data, making reasonable scientific inferences, and considering ecological linkages (interactions between habitats and species), resiliency, and sustainability.

The Trustees identified the need for a comprehensive restoration plan at a programmatic level to guide and direct the massive restoration effort, based on the following five overarching goals:

- Restore and conserve habitat.
- Restore water quality.
- Replenish and protect living coastal and marine resources.
- Provide and enhance recreational opportunities.
- Provide for monitoring, adaptive management, and administrative oversight to support restoration implementation.

These five goals work both independently and together to restore injured resources and services.



Source: Kate Sweeney for NOAA.

**Figure 1.5-1.** Major categories of *Deepwater Horizon* oil spill injuries and the corresponding injury assessment sections in Chapter 4 of this document.

Through their restoration planning efforts, the Trustees identified 13 distinct Restoration Types that pertain to these goals (Figure 1.5-2). The Trustees also identified restoration planning approaches that can help meet the more specific goals developed for each Restoration Type. This Final PDARP/PEIS focuses on presenting these Restoration Types and approaches at a programmatic level. The Trustees will subsequently identify, plan, evaluate, carry out, and monitor specific restoration activities in accordance with the goals, Restoration Types, and restoration approaches of this programmatic plan.

As required by OPA and NEPA, the Trustees developed and evaluated alternatives for comprehensive restoration planning:

- Alternative A establishes a comprehensive, integrated ecosystem restoration plan (referred to as the integrated restoration portfolio) based on the programmatic Trustee goals.
- Alternative B establishes a resource-specific restoration plan based on the programmatic Trustee goals.
- Alternative C defers development of a comprehensive restoration plan until greater scientific understanding of the injury determination is achieved.

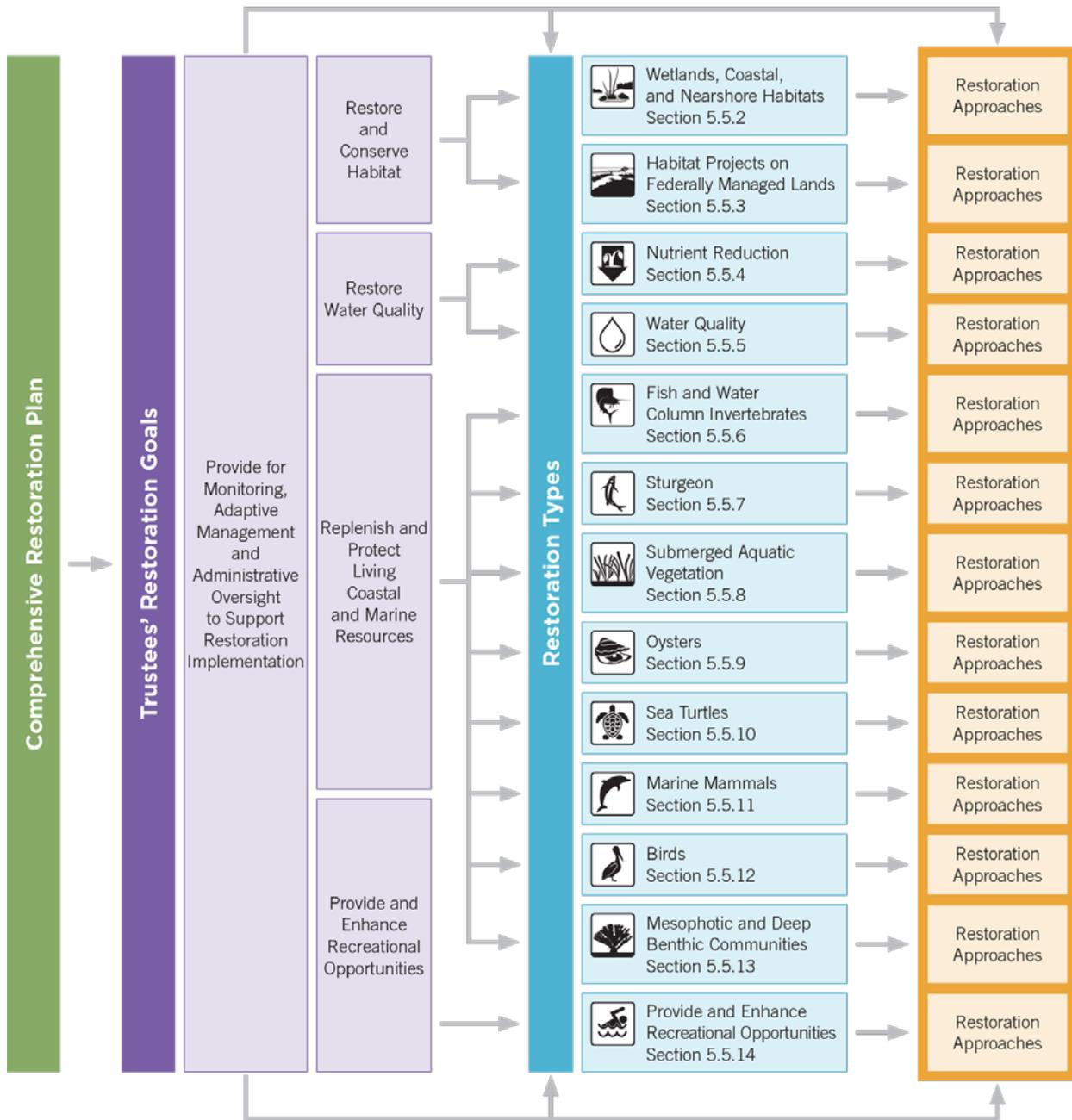
In addition, as required by OPA and NEPA, the Trustees considered a natural recovery/no action alternative, under which the Trustees would not prepare a restoration plan or implement future restoration projects under NRDA, other than those already approved through the Early Restoration process.

Alternatives A, B, and C represent different restoration philosophies. Alternatives A and B would result in two different investment strategies for the available settlement funds (see Section 1.6), making use of the same Restoration Types presented in Figure 1.5-3. Alternative C defers restoration and could include the same Restoration Types as Alternatives A and B, but also could include refinements to those Restoration Types or a change in focus across the Restoration Types following further study.

The Trustees identified Alternative A (comprehensive, integrated ecosystem restoration) as preferred, because it best restores the range of habitats, resources, and services injured by the spill. By investing in a wide range of resources and habitats throughout the region, the Trustees' integrated portfolio under Alternative A will provide benefits to a large variety of species and ecological services. It will also maximize the likelihood of appropriately compensating the public for all the resources, services, and ecological linkages injured by the spill. Under this preferred alternative, the Trustees allocate funds based on their understanding and evaluation of exposure and injury to natural resources and services, as well as their analysis of where restoration spending for the various Restoration Types would be most appropriate (see Section 5.10 for details). Allocations are to:

- **Restoration Types.** The proposed plan allocates specific amounts of money to the 13 Restoration Types shown in Figure 1.5-2. The portfolio includes restoration focused on specific resource types, such as marine mammals and migratory birds, as well as restoration of supporting habitats such as coastal wetlands.

- Restoration Areas.** The proposed plan allocates specific amounts of money to seven geographic areas: each of the five Gulf states, Regionwide, and the Open Ocean. The allocation includes funds for administrative oversight and monitoring and adaptive management. Some additional funds will be reserved for currently unknown conditions and adaptive management.



**Figure 1.5-2.** The Trustees' approach to developing this restoration plan, showing the goals and their related Restoration Type(s) connecting to restoration approaches, with monitoring, adaptive management, and administrative oversight planned throughout all approaches.



*Sources:* Top: Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Task Force. Middle left: Florida Department of Environmental Protection. Middle right: Jud Kenworthy. Bottom left: CWPPRA Task Force. Bottom right: CWPPRA Task Force.

**Figure 1.5-3.** A wide variety of coastal habitat restoration projects have been successfully implemented in the northern Gulf of Mexico.

**Top:** CWPPRA Barataria Barrier Island Complex project (BA-38), Plaquemines Parish, Louisiana.

**Middle left:** Pensacola Bay oyster reef restoration, Santa Rosa County, Florida, NOAA Restoration Center, Community-based Restoration Program.

**Middle right:** Scientist monitoring a seagrass restoration site.

**Bottom left:** CWPPRA Whiskey Island back-barrier marsh creation (TE-50), Terrebonne Parish, Louisiana.

**Bottom right:** CWPPRA Bayou Dupont sediment delivery system project, Jefferson and Plaquemines Parishes, Louisiana (BA-39).

The investment of funds proposed under Alternative A particularly focuses on restoring Louisiana coastal marshes, which is an essential element of the proposed plan. Given both the extensive impacts to Louisiana marsh habitats and species from the *Deepwater Horizon* incident and the critical role that these habitats play for many injured resources and for the overall productivity of the northern Gulf region, coastal and nearshore habitat restoration (see examples in Figure 1.5-3) is the most appropriate and practical mechanism for restoring the ecosystem-level linkages disrupted by the *Deepwater Horizon* incident. Aspects of this vast and diverse injury, however, will require additional restoration, especially to resources that spend some or all of their lives in the open waters of the Gulf of Mexico. Therefore, this plan also calls for restoration focused on specific resources. To ensure that recreational use injuries are fully compensated, additional investments will be made to enhance human interaction with the environment by increasing recreational opportunities, improving water quality and habitats, and using education and outreach to engage people in restoration and stewardship of natural resources.

#### 1.5.4 NEPA Evaluation of Restoration

In addition to presenting the findings of a natural resource damage assessment and providing a proposed restoration plan under the Oil Pollution Act, this Final PDARP/PEIS includes an examination of the environmental impacts of the preferred alternative and additional restoration alternatives, as required by NEPA.

The proposed restoration is broad and unprecedented in scope, and may be taking place in an environmentally sensitive area. For example, there are areas designated as critical habitat for a number of Endangered Species Act-listed species in the northern Gulf of Mexico, including loggerhead sea turtles, smalltooth sawfish, Gulf sturgeon, beach mice, and piping plover. Thus, it was important for the Trustees<sup>10</sup> to develop a programmatic EIS to correspond with the proposed restoration plan. More specific environmental analyses will be developed for specific restoration activities in the future.

Restoration can potentially affect natural, social, cultural, and economic resources in many ways. Impacts could include direct effects, indirect effects, and cumulative effects—that is, the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. While restoration projects are intended to have positive effects on the environment overall, it is possible that some projects could also have unintended negative consequences. For example, a construction project might disturb plant and animal habitats, and it might produce air pollution and noise while construction is taking place. A project designed to improve habitat for certain plant or animal species might inadvertently diminish habitat for other species. The types of impacts considered in the PEIS are:

- Impacts to physical resources.
  - Geology (soil, erosion).

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<sup>10</sup> The *Deepwater Horizon* Trustee Council agencies are serving as cooperating agencies under NEPA. While the Army Corps of Engineers has not participated as a cooperating agency on the PDARP/PEIS, the Corps has special expertise and experience with some of the projects likely to be proposed in the course of implementing the PDARP/PEIS, and will be invited to participate as a cooperating agency on such projects.

- Hydrology (surface water and ground water flows) and water quality.
- Air quality.
- Noise.
- Impacts to biological resources.
  - Habitats.
  - Living coastal and marine resources (wildlife, marine and estuarine fauna and flora, protected species).
- Impacts to socioeconomics and environmental justice (disproportionate effects on minority and low-income populations).
  - Cultural resources.
  - Infrastructure.
  - Land and marine management.
  - Tourism and recreational use.
  - Fisheries and aquaculture.
  - Marine transportation.
  - Aesthetics and visual resources.
  - Public health and safety, including flood and shoreline protection.

By using a PEIS process to carefully review the potential impacts of the proposed integrated restoration plan as well as the potential impacts of restoration alternatives, the Trustees determined that the proposed integrated restoration plan will have both beneficial and adverse impacts. The beneficial impacts of restoration, however, would substantially outweigh potential adverse impacts, especially in the long term, and especially if best practices are used to minimize adverse impacts. For example, benefits to physical and biological resources are typically long term and focus on recovery of habitat and/or species populations. Adverse impacts can be related to construction impacts such as short-term disturbance. Adverse impacts can also result from intentional long-term changes that are made to geology, vegetation, and substrates when an existing habitat is converted to a restored habitat, such as shallow open-water being converted to marsh. In Appendix 6.A, Best Practices, the Trustees recommend best practices to guide future restoration activities.

In addition to evaluating the potential impacts of the preferred alternative (integrated restoration portfolio), the Trustees examined the potential environmental impacts of alternatives, as follows:

- **Alternative B—Resource-specific restoration.** This alternative would rely on the same Restoration Types as the preferred alternative, but with a different emphasis across Restoration Types (i.e., a focus on replenishing and protecting specific marine resources with correspondingly less emphasis on coastal habitat restoration). At a programmatic level, the potential adverse environmental consequences could largely be the same as with the preferred alternative, since the same Restoration Types are proposed. However, environmental impacts may differ as the project approaches emphasized in subsequent restoration plans may differ. Given the reduced emphasis on restoration of Gulf coastal habitats, there is less certainty about

the benefits that Alternative B would provide for the reasonably inferred but unquantified injuries described in Chapter 4.

- **Alternative C—Continue injury assessment and defer restoration planning.** This alternative increases the potential for targeting restoration projects to identified injuries; however, it would delay restoration action and would result in less restoration funding, as funds would be needed for the continued injury assessment. Continued assessment would cause substantial delays in comprehensive restoration action beyond Early Restoration, which would lead to further losses in natural resources and their services, along with corresponding socioeconomic impacts. Additionally, the reduction in funds available for restoration (due to expenditure on continued assessment) would result in Alternative C not providing as much benefit to injured resources as Alternatives A or B.
- **Alternative D—Natural recovery/no action.** The Trustees are required under NEPA to evaluate a No Action alternative. Under this alternative, Early Restoration would be the only restoration implemented; no additional restoration under NRDA would be done by Trustees. This alternative would not accomplish beneficial impacts to injured resources via additional active NRDA restoration. Natural resources would recover more slowly, and some might not recover, without restoration, and the public would not be compensated for losses to natural resources and their services during this recovery time period (“interim” losses).

### 1.5.5 Governance

In keeping with the Trustees’ responsibilities under OPA, and in the context of the comprehensive, integrated ecosystem restoration plan identified as the preferred alternative, the Trustees’ governance structure guides the continuing restoration process and establishes transparency and public accountability of the Trustees’ actions. The Trustees assure restoration is achieved with financial accountability and that obligations set forth in the Oil Pollution Act, the future Consent Decree, the Final PDARP/PEIS, and future restoration plans are met. The duties of the Trustees include restoration planning, restoration implementation, monitoring and adaptive management, financial management, public engagement, and restoration tracking.

The Trustees propose a distributed governance structure that assigns a Trustee Implementation Group (TIG) for each of seven Restoration Areas (restoration in each of the five Gulf states, Open Ocean, and Regionwide), and additionally establishes a TIG for “Unknown Conditions and Adaptive Management.” The Trustees believe that restoration can be carried out most efficiently by directly vesting restoration decision-making to those Trustees who have the strongest collective trust interests in natural resources and their services within each Restoration Area. Because these are shared public trust resources, with overlap in federal and state jurisdiction, both state and federal Trustees serve on the Trustee Council and within respective TIGs. The general division of responsibilities between the TIGs and the Trustee Council is as follows:

- *The TIGs’ function* will primarily be planning, deciding on, and implementing restoration, including monitoring and adaptive management. Each TIG will make all restoration decisions for the funding allocated to its Restoration Area.

- *The Trustee Council's function* will primarily be ensuring coordination and efficiency across the TIGs by establishing procedures and practices needed to standardize or provide consistency for some TIG activities.

### 1.5.6 Coordination with Other *Deepwater Horizon* Restoration Planning Efforts

Coordination between the NRDA restoration and other *Deepwater Horizon* restoration programs will promote successful implementation of this Final PDARP and optimize ecosystem recovery within the Gulf of Mexico. The Trustee Council may consider the restoration actions of these other programs to identify synergies and reduce potential redundancies when selecting projects under this PDARP. These programs will produce significant monitoring data to inform restoration decisions and improve adaptive management. Data sharing between programs is encouraged, and the Trustee Council will make information for projects selected under this PDARP available to the public, as well as to the scientific community and other restoration programs.

Other *Deepwater Horizon* restoration planning efforts are planned or underway as a result of:

- **Clean Water Act penalties (RESTORE Act).** The Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States (RESTORE) Act of 2012 dedicates 80 percent of any civil and administrative penalties paid under the Clean Water Act to the Gulf Coast Restoration Trust Fund for ecosystem restoration, economic recovery, and tourism promotion in the Gulf Coast region.
- **Criminal plea agreement payments.** In 2012 to 2013, BP and Transocean each entered into criminal plea agreements with the United States Justice Department. Substantial funding under those plea agreements is being directed to:
  - The **Gulf Environmental Benefit Fund**, administered by the National Fish and Wildlife Foundation, to restore and protect Gulf Coast natural resources.
  - The **North American Wetlands Conservation Fund**, administered by the U.S. Fish and Wildlife Service, for “wetlands restoration and conservation projects” located in the Gulf or projects that would “benefit migratory bird species and other wildlife and habitat” affected by the oil spill.
  - The **National Academy of Sciences**, to enhance the safety of offshore drilling to protect human health and the environment.

## 1.6 Proposed Settlement and PDARP Decision

Under OPA, there are several different possible scenarios for the Trustees to receive the funding needed to implement restoration. In one scenario, the Trustees prepare a draft and final PDARP and present a written demand to the responsible parties to either implement the restoration or provide the funding necessary for restoration implementation (15 CFR § 990.62). If the responsible parties reject the demand, the Trustees can then file a judicial claim (i.e., a lawsuit) in an attempt to win a judgment for the cost of restoration, or the Trustees can seek funding for restoration from the federal government's Oil Spill Liability Trust Fund (15 CFR § 990.64). This litigation scenario typically results in long delays and has an uncertain outcome with respect to the amount of funding that may be gained for restoration.

A second scenario under OPA is a settlement scenario. The OPA regulations note that "Trustees may settle claims for natural resource damages . . . at any time, provided that the settlement is adequate in the judgement of the trustees to satisfy the goal of OPA and is fair, reasonable, and in the public interest" (15 CFR § 990.25). A settlement avoids the risks and delays of litigation and provides the Trustees with certainty about the amount of funding available for restoration.

On July 2, 2015, BP, the major party responsible for the *Deepwater Horizon* spill, announced that the Trustees and BP had reached an agreement in principle to settle natural resource damages for the spill (DOJ 2015a, 2015b). The Trustees have proposed to accept the settlement with BP to resolve BP's liability for natural resource damages associated with the *Deepwater Horizon* oil spill. Under this settlement, BP would pay a total of \$8.1 billion for restoration to address natural resource injuries (this includes \$1 billion already committed for Early Restoration), plus up to an additional \$700 million (some of which is in the form of accrued interest) to respond to natural resource damages unknown at the time of the agreement and/or to provide for adaptive management. Finally, the settlement also includes a proposed allocation of the settlement proceeds to various Restoration Types and Restoration Areas. This proposed settlement is described in a proposed Consent Decree that was recently lodged in a federal case arising from matters related to the *Deepwater Horizon* oil spill: *United States v. BPXP et al.*, Civ. No. 10-4536, centralized in MDL 2179, *In re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010 (E.D. La.)*. The proposed Consent Decree was subject to its own public comment process regarding the sufficiency of the settlement or other terms.<sup>11</sup> Upon conclusion of the public comment process, if both the plaintiffs and then the Court find the decree to be adequate, fair, reasonable, and in the public interest, the Court will officially enter the final Consent Decree between defendant BP and plaintiffs United States and the Gulf States.

In this Final PDARP/PEIS, the Trustees outline the injury assessment (Chapter 4) and proposed restoration plan (Chapters 5, 6, and 7). The Trustees propose to make a programmatic decision regarding how this funding would be used for restoration to offset the natural resource injuries described in this document. This programmatic decision includes the preferred restoration alternative described in Chapter 5, as well as the associated provisions for governance of restoration spending

<sup>11</sup> The Consent Decree also relates to other types of legal claims (such as civil penalties) that are not part of the NRDA process and are not discussed here. A link for the proposed Consent Decree is available at [www.gulfspillrestoration.noaa.gov](http://www.gulfspillrestoration.noaa.gov).

described in Chapter 7. As explained in summary above and in detail in Section 5.5, the preferred restoration alternative provides for a comprehensive, integrated ecosystem restoration plan with a portfolio of Restoration Types that address the diverse suite of injuries that occurred at both regional and local scales. This proposal focuses on allocating funds to meet five goals and 13 restoration activities designed to meet these goals. This decision for restoration planning was submitted for public review and comment, as was the integrated PEIS.<sup>12</sup>

The Trustees believe that both the settlement and the programmatic plan are appropriate for the following reasons. The Trustees have jointly examined and assessed the extent of injury and the proposed restoration alternatives with particular consideration of approaches to restoring, replacing, rehabilitating, or acquiring the equivalent of the injured natural resources and services. If the proposed decree becomes final, and if the funding available for restoration is expended in conformance with the programmatic plan proposed in this Final PDARP/PEIS, the Trustees are satisfied that the resulting efforts (together with the work flowing from the Framework Agreement) will make the public whole for the loss in natural resources and services suffered. In reaching this conclusion, the Trustees have considered, among other things:

- The nature and extent of the specific injuries that have been identified and studied and the uncertainties attached to those injuries.
- Uncertainties as to other injuries not fully studied.
- The potential benefits (and detriments) of ecosystem-level habitat restoration, and the uncertainties attached to those restoration options.
- Potential benefits (and detriments) from other approaches to restoration, such as shifting the focus of restoration away from ecosystem restoration to restoration of specific, well-studied resources, and the uncertainties attached to those restoration options.
- The further degradation to the environment that would occur as restoration is delayed while further study is undertaken to narrow uncertainties.
- The further degradation to the environment that would occur as restoration is delayed during the litigation process.
- The benefits of starting restoration sooner rather than litigating.

The Trustees conclude that the settlement provides a reasonable approach to achieving the goals of OPA to make the public and the environment whole, is a fair and reasonable result, and advances the public interest.

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<sup>12</sup> The Trustees held a series of public meetings to facilitate public review and comment on the proposed restoration plan.

## 1.7 Public Involvement in Restoration Planning

OPA and NEPA require the Trustees to consider public comments on the *Deepwater Horizon* restoration planning process. Public outreach and involvement have been an integral part of Trustee restoration planning since 2010.

The Trustees first provided public notice on the need for restoration planning for the *Deepwater Horizon* oil spill in October 2010.<sup>13</sup> Since then, the Trustees have engaged the public in several different ways, including obtaining input during a formal restoration scoping process in 2011.<sup>14</sup> Each state and federal Trustee established a website to provide the public with information about injury and restoration processes.<sup>15</sup> The Trustees also developed a website<sup>16</sup> where the public can submit restoration project ideas on an ongoing basis. The Trustees have reviewed and considered these project ideas as part of restoration planning and during development of this document.

In addition, during each of the five completed phases of Early Restoration planning, the Trustees published a draft restoration plan, held public meetings, solicited public comments, and responded to comments in a final

### Public Engagement During the NRDA Process

Trustees have engaged with the public throughout the NRDA process. Key outreach methods have included:

- Announcements in the *Federal Register*
- Public meetings
- Websites

Trustees welcome all public comments and consider recommended restoration ideas to help identify what types of restoration should be implemented and potential impacts.

## 1.7 Public Involvement in Restoration Planning

<sup>13</sup> Notice of Intent, 75 FR 60800, Discharge of Oil From *Deepwater Horizon*/Macondo Well, Gulf of Mexico; Intent to Conduct Restoration Planning (<https://federalregister.gov/a/2010-24706>); Notice of Intent, 36 La. Reg. 2441-43 (Oct. 20, 2010), Restoration Planning – Discharge of Oil From the *Deepwater Horizon* Mobile Offshore Drilling Unit and the Subsea Macondo Well into the Gulf of Mexico, April 20, 2010 (<http://www.doa.louisiana.gov/osr/reg/1010/1010.pdf>).

<sup>14</sup> Public Scoping for Preparation of a Programmatic Environmental Impact Statement for the *Deepwater Horizon* BP Oil Spill, April 2011; <http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/2011/04/Public-DWH-PEIS-Scoping-Review-Document.pdf>. The April 2011 scoping document provided the public with background on scoping, the NRDA process, the relationship of the NRDA and NEPA processes, alternatives development, types of restoration, and environmental consequences.

<sup>15</sup> The Trustees established the following websites:

- NOAA, Gulf Spill Restoration, available at <http://www.gulfspillrestoration.noaa.gov/>
- NOAA, DIVER, available at <https://dwhdiver.orr.noaa.gov/>
- DOI, *Deepwater Horizon* Oil Spill Response, available at <http://www.fws.gov/home/dhoilspill/>
- Texas Parks and Wildlife Department, *Deepwater Horizon* Oil Spill, available at [http://www.tpwd.state.tx.us/landwater/water/enviroconcerns/damage\\_assessment/deep\\_water\\_horizon.phtml/](http://www.tpwd.state.tx.us/landwater/water/enviroconcerns/damage_assessment/deep_water_horizon.phtml/)
- Louisiana, *Deepwater Horizon* Oil Spill Natural Resource Damage Assessment, available at <http://la-dwh.com/>
- Mississippi Department of Environmental Quality, Natural Resource Damage Assessment, available at <http://www.restore.ms/>
- Alabama Department of Conservation and Natural Resources, NRDA Projects, available at <http://www.alabamacoastalrestoration.org>
- Florida Department of Environmental Protection, *Deepwater Horizon* Oil Spill Response and Restoration, available at [www.deepwaterhorizonflorida.com](http://www.deepwaterhorizonflorida.com).

<sup>16</sup> See <http://www.gulfspillrestoration.noaa.gov/restoration/give-us-your-ideas/>.

restoration plan. Although these comments were targeted at Early Restoration, much of the input is relevant to the programmatic restoration planning process. Future phases of restoration planning and implementation for specific projects will provide the public with additional opportunities for review and comment.

### 1.7.1 Public Review Process for This PDARP/PEIS

The Trustees encouraged the public to review and comment on the Draft PDARP/PEIS during a 60-day review period. The Trustees held a series of public meetings to facilitate the public review and comment process. At the close of the public comment period, the Trustees considered all relevant comments received during the public comment period and have revised the PDARP/PEIS as appropriate. A summary of comments received and the Trustees' responses are included in Chapter 8 of this final document.

Separately, the United States Department of Justice, Environment and Natural Resources Division, took public comment for 60 days on the proposed Consent Decree that is lodged with the court in *Deepwater Horizon* oil spill: *United States v. BPXP et al.*, Civ. No. 10-4536, centralized in MDL 2179, *In re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010 (E.D. La.)*. The Consent Decree also relates to other types of legal claims (such as civil penalties) that are not part of the NRDA process and are not discussed here. To access the proposed Consent Decree visit <http://www.justice.gov/enrd/deepwater-horizon>.

### 1.7.2 Next Steps

Following appropriate OPA and NEPA regulatory procedures and timing, after public release of this Final PDARP/PEIS, the Trustees intend to prepare a Record of Decision (ROD) that formally selects a programmatic alternative for implementation. The preferred programmatic alternative in this Final PDARP/PEIS remains Alternative A, consistent with the Draft PDARP/PEIS.

### 1.7.3 Administrative Record

The Trustees opened a publicly available Administrative Record for the NRDA for the *Deepwater Horizon* oil spill, including restoration planning activities, concurrently with publication of the 2010 Notice of Intent (pursuant to 15 CFR § 990.45). DOI is the lead federal Trustee for maintaining the Administrative Record, which can be found at <http://www.doi.gov/deepwaterhorizon/adminrecord>. Information on restoration implementation for Emergency and Early Restoration efforts is being provided to the public through the Administrative Record and other outreach efforts, including <http://www.gulfspillrestoration.noaa.gov>.

## 1.8 Overview of Public Comments on the Draft PDARP/PEIS and Key Changes in the Final PDARP/PEIS

The Trustees provided multiple opportunities for public comment as described in Section 1.7.1 and Chapter 8. During the comment period, the Trustees received a total of 6,370 individual submissions from private citizens; businesses; federal, state, and local agencies; nongovernmental organizations; and others. The Trustees received comments via public meetings, Web-based submissions, e-mail, and mailed-in submissions.

### 1.8.1 Overview of Public Comments on the Draft PDARP/PEIS

The Trustees received general comments on the Draft PDARP/PEIS and also received comments on specific chapters and sections. With respect to the NEPA analysis, no issues of environmental controversy were identified in the public comments. Comments received generally fell into categories that followed the chapters.

#### **Chapters 1 through 3 (Introduction and Executive Summary, Incident Overview, Ecosystem Setting):**

- General support for (and some opposition to) the Trustees producing the PDARP/PEIS.
- General support for restoration of Gulf of Mexico resources.
- Critiques of the public involvement and engagement process.
- Requests for technical corrections and clarifications.

#### **Chapter 4 (Injury to Natural Resources):**

- General support for the thoroughness of the assessment and the clarity of the presentation of this complex information.
- Requests for technical corrections and clarifications.
- Expressions of concern that the NRDA valuation of damages was incomplete, was too low, and did not incorporate the full range of ecosystem services.
- Requests for more information about the Trustees' assessment methods and findings and critiques of the adequacy of those methods and findings.

#### **Chapter 5 (Restoring Natural Resources):**

- Expressions of support for the preferred alternative "Comprehensive, Integrated Ecosystem Restoration" and an ecosystem approach to restoration in general.
- Expressions of support for specific Restoration Types or requests for clarification.

- Expressions of concern over the adequacy of the funding allocations for certain Restoration Types or Restoration Areas.
- Suggestions for additional restoration approaches.
- Requests for restoration coordination with other entities.

#### **Chapter 6 (Environmental Consequences and Compliance with Other Laws):**

- Expressions of concern that some restoration approaches have the potential for unintended adverse impacts to natural and cultural resources.
- Proposed additional information to include in the analysis of cumulative impacts and requests for clarification regarding relationships between the PDARP/PEIS and other Gulf restoration programs.
- Expressions of concern over the level of climate change adaptation included in the PDARP/PEIS.
- Expressions of concern about references to spatial planning and the inclusion of the National Ocean Policy Executive Order.

#### **Chapter 7 (Governance):**

- A large number of comments, including lengthy comment letters with detailed recommendations, on the Trustees' governance structure. The majority of these comments expressed concern over the structure, or where supportive of the structure caveated that support with a series of recommendations and requested clarifications.
  - Expressions of concern about the proposed governance structure included the ability of the Trustees to achieve the proposed comprehensive, integrated ecosystem restoration approach with a decentralized organizational structure by Trustee Implementation Groups (TIGs) and with no mention of Trustee Council dedicated staff.
- Expressions of concern and confusion over administrative costs, the potential inefficiency of the TIG structure, and the extent to which administrative support will come from the Open Ocean TIG administrative funds.
- Expressions of concern over the funding allocated to certain Restoration Areas and Restoration Types, including concern that funding be used for projects that restore injured resources.
- Some expressions of support for the governance structure, caveated to request clarifications or provide specific recommendations.
- Requests for a Regional Citizen Advisory Council and a Science Advisory Group to ensure that the ecosystem approach is achieved, and to provide greater collaboration and coordination with the broader science community.

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- Expressions of need for open and transparent processing of Trustee work, including open meetings, public review of standard operating procedures (SOP), and public availability of data and reports.
- Expressions of support for monitoring, scientific support, and the monitoring and adaptive management framework as described in the PDARP/PEIS, as well as expressions of concern about the need for consistency in monitoring.
- Expressions of concern about how decisions will be made regarding expenditure of “Unknown Conditions and Adaptive Management” funds.

### 1.8.2 Key Changes in the Final PDARP/PEIS

The Trustees revised the Draft PDARP/PEIS after considering the public comments received. The Trustees also made minor editorial and technical revisions to the document to address issues found through internal review of the Draft PDARP/PEIS. None of these revisions affected the Trustees’ conclusions about the ecosystem-level injury in the northern Gulf of Mexico and the restoration needed to address this injury. An overview of the Trustees’ changes is included below. The Trustees have added Chapter 8 to the Final PDARP/PEIS, which includes statements of concern summarizing the comments received and the Trustees’ response to those comments.

#### **Overview of Revisions to Chapter 1:**

- The majority of the changes to this chapter were editorial text changes to improve clarity and flow.
- The Trustees made minor revisions reflecting that this document is now a final document (instead of a draft) and the public comment process has been completed.
- The Trustees updated the status of Phase V Early Restoration.
- In Chapter 1, Section 1.8 was added to provide an overview of the comments received on the Draft PDARP/PEIS and to summarize the revisions made between the Draft PDARP/PEIS and Final PDARP/PEIS.
- The Trustees conclude that no issues of controversy related to environmental consequences were raised.

#### **Overview of Revisions to Chapter 2:**

- The only changes to this chapter were editorial text changes to improve clarity and flow.

#### **Overview of Revisions to Chapter 3:**

- The majority of the changes to this chapter were editorial text changes to improve clarity and flow.

- The Trustees made minor revisions to the chapter to address technical concerns raised by commenters:
  - The Trustees clarified that industrial activities, including oil and gas extraction, contribute to land loss and subsidence.
  - The Trustees clarified that marine organisms and their reproductive elements are also part of transport pathways.

#### **Overview of Revisions to Chapter 4:**

- The majority of the changes to this chapter were editorial text changes to improve clarity and flow. An overview of minor technical revisions made to the chapter is found below. None of these revisions affected the Trustees' conclusions about the ecosystem-level injury in the northern Gulf of Mexico and the restoration needed to address this injury.
- The Trustees made minor revisions to the chapter to address technical concerns raised by commenters:
  - The Trustees clarified their descriptions of dispersant, the source of dispersant application (subsea or surface), surface-dispersed oil, the toxicity tests conducted with dispersant, and the impacts of dispersant on the Gulf ecosystem.
  - The Trustees clarified descriptions of their toxicity tests.
  - The Trustees clarified that the marine mammal and sea turtle assessments relied on similar information.
  - The Trustees clarified their discussion of effects to offshore populations of marine mammals versus bay, sound, and estuary populations of marine mammals.
- The Trustees made minor technical corrections to the chapter to address issues found through internal review of the document; a more detailed list of these changes has been incorporated into the Administrative Record.
  - The Trustees corrected figure scales and captions where necessary and adjusted text where the text did not correctly reflect a table or figure.
  - The Trustees added LC20 and LC50 values to the text where appropriate.
  - The Trustees added checkmarks to a table to capture all appropriate categories of benthic injury.
  - The Trustees clarified their use of the terms "bacteria," "protozoa," "phytoplankton," and "zooplankton."
  - The Trustees revised their discussion of synthetic-based drilling mud.

- The Trustees provided a more precise description of a mesophotic reef sampling location.
- The Trustees included updated references.
- The Trustees found a small error in their calculations of sea turtle exposure and injury and revised the estimates of quantified injury and exposure by 5 percent or less.
- The Trustees revised their estimates of amphipod and red drum injury quantification in the nearshore environment by 11 percent or less, based on a new calculation of a dose-response curve.
- After additional QC steps, the Trustees made minor adjustments to a few toxicity test results, including revising some LC20 and LC50 calculations, a confidence interval, and some mortality estimates.

#### **Overview of Revisions to Chapter 5:**

- The majority of the changes to this chapter were editorial text changes to improve clarity and flow.
- Early Restoration Phase V was finalized; therefore, the Trustees revised Section 5.4.3, Early Restoration; Section 5.5.14, Provide and Enhance Recreational Opportunities; and Appendix 5.B, Early Restoration, to reflect the Early Restoration Phase V projects that were selected.
- In response to public comment, the Trustees revised the restoration approach “Enhance development of bycatch reducing technologies” to be more inclusive of other fishery-related restoration opportunities, including mechanisms for reducing illegal, unreported, and unregulated fishing in the Gulf of Mexico, in Section 5.5.6. The restoration approach is now called “Voluntary fisheries-related actions to increase fish biomass.” The description in Appendix 5.D, Section D.3.5, was also revised.
- In response to public comment, the Trustees revised the descriptions in Appendix 5.D for restoration approaches “Reduce mortality among Highly Migratory Species and other oceanic fishes” (Section D.3.2) and “Voluntary fisheries-related actions to increase fish biomass” (Section D.3.5) to include the potential for vessel purchase as part of the incentive structure for voluntary participation.
- The Trustees deleted reference to the restoration approach “Reduce mortality among Highly Migratory Species and other oceanic fishes” under the Sea Turtle Restoration Type in Section 5.5.10 because it was similar to the restoration approach “Reduce sea turtle bycatch in commercial fisheries through identification and implementation of conservation measures.”
- In response to public comment, the Trustees revised the description in Appendix 5.D for the restoration approach “Protect and conserve marine, coastal, estuarine, and riparian habitats” (Section D.1.7) to include additional potential benefits of land acquisition projects.

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- The Trustees revised the implementation considerations for the restoration approaches “Place hard ground substrate and transplant coral” (Section D.7.1) and “Enhance recreational experiences” (Section D.8.2) to clarify the intent to avoid impacts to listed coral species during substrate placement and coral fragmentation.

#### **Overview of Revisions to Chapter 6:**

- The majority of the changes to this chapter were editorial text changes to improve clarity and flow and to reflect the changes made to Chapter 5 and Appendix 5.D in the evaluation of environmental consequences.
- The Trustees updated the descriptions of several restoration approaches and associated text to correspond to changes made in Chapter 5 and Appendix 5D; the revisions did not result in substantive changes to the direct, indirect, or cumulative effects analyses for these restoration approaches
- In response to public comment, the Trustees incorporated additional clarification into the text regarding the programmatic approach to cumulative impacts analysis in the PDARP/PEIS and their intent to build upon this analysis through tiering at the time of subsequent restoration plans. The chapter text was clarified by stating that tiered analysis will take into consideration other funded restoration projects (i.e., Resources and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States [RESTORE] and Gulf Environmental Benefit Fund [GEBF] projects) and evaluate them with consideration of the appropriate geographic and resource focus (see Section 6.6.4.1).
- In response to public comment and based on updated public information, for purposes of cumulative effects analyses, the Trustees updated language describing restoration funding under the RESTORE Act to clarify the full amount available, and clarified that because the balance of the funds is subject to appeal, it is not yet certain whether that amount will be paid (Section 6.6.4.1.1). Information was similarly updated with respect to GEBF funding (Section 6.6.4.1.2).
- The Trustees updated language under Endangered Species Act (ESA) compliance to describe the current status of ESA Section 7 programmatic consultations with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), including notice that both NMFS and USFWS have initiated consultation under ESA (Section 6.6.9.1).
- Based on public comments received and addressed in Chapter 7, the Trustees clarified text in “NEPA Considerations and Tiering Future Restoration Planning” (Section 6.17.2), noting that the consideration of cumulative impacts of proposed projects through tiering from this PDARP/PEIS is consistent with the Council on Environmental Quality’s 2014 guidance on effective programmatic NEPA analysis.
- In response to public comment, the Trustees clarified that analysis of the cumulative impacts on resources would be provided at each level of review, either by relying upon the analysis in the

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programmatic EIS or adding to that analysis in the tiered NEPA review. In both cases, the programmatic cumulative impacts analysis would be incorporated by reference.

- Two additional best practices were included in Appendix 6.A based on internal agency review.
- Appendix 6.C (Trustees' Correspondence) was expanded to include correspondence regarding cooperating agency status, correspondence regarding EPA's environmental rating of the Draft PDARP/PEIS under Section 309 of the Clean Air Act, correspondence to NMFS and to USFWS requesting programmatic consultation under Section 7 of ESA, correspondence to state coastal zone management programs (CZMPs) seeking concurrence on the proposed Coastal Zone Management Act (CZMA) federal consistency determination, and State CZMP responses to that federal consistency determination.

### **Overview of Revisions to Chapter 7:**

- The Trustees made revisions to the chapter to address technical concerns raised by reviewers:
  - In Section 7.2 clarifications were made to define which Administrative Oversight and Comprehensive Planning allocations will fund state and federal individual Trustees' non-project-specific participation on TIGs and which allocation would fund work conducted on behalf of the Trustee Council.
  - Section 7.3 was modified to include commitments to transparency during the restoration planning process.
  - In Section 7.5, clarification on the use of Unknown Conditions and Adaptive Management funds was added, including the development of specific procedures to guide decisions on the use of this allocation, and their inclusion in SOPs.
  - Section 7.6 was modified to include a commitment to a Cross-TIG monitoring and adaptive management working group.
  - Section 7.7 was modified to include commitments to public engagement through annual Trustee Council and TIG meetings that are publicly noticed.
  - Section 7.7 was modified to clarify text about the DIVER Restoration Management Portal.
- The Trustees made minor technical corrections to the chapter to address issues found through internal review of the document.
  - Modified Section 7.3 by changing "strategic plans" to "strategic frameworks" to clarify the actual intent that these frameworks would help guide restoration planning in the TIGs and to differentiate the frameworks from project-specific restoration plans.
  - Revised Section 7.7 to include additional functions that the Trustees intend to support with the DIVER Restoration Management Portal.

## What Is in This Final *Deepwater Horizon* Programmatic Damage Assessment and Restoration Plan/Final Programmatic Environmental Impact Statement (Final PDARP/PEIS)?

**Chapter 1 (Introduction and Executive Summary)** describes why this Final PDARP/PEIS was written and under what authority. It also presents the *Deepwater Horizon* Trustees and NRDA process, the injury assessment process and key findings, the restoration planning approach and alternatives, the settlement proposed by BP and the Trustees' response, public involvement in restoration planning, and opportunities for public comment.

**Chapter 2 (Incident Overview)** provides an overview of the *Deepwater Horizon* oil spill incident. It describes what happened in the aftermath of the *Deepwater Horizon* explosion, the amount of oil and other spill materials released into the Gulf of Mexico, and the response actions taken to try to reduce harm to people and the environment.

**Chapter 3 (Ecosystem Setting)** describes the Gulf of Mexico regional ecosystem and its diverse natural resources and associated services to provide context for the injury assessment and restoration alternatives, including understanding the affected environment (as defined by NEPA) for the programmatic restoration plan and EIS.

**Chapter 4 (Injury to Natural Resources)** summarizes the Trustees' approach to and findings resulting from the injury assessment. Each section in Chapter 4 covers a key part of the injury assessment:

- Section 4.1 (Approach to the Injury Assessment) describes the process by which the Trustees considered how to study the effects from the spill.
- Section 4.2 (Natural Resource Exposure) explains how oil moved through the environment after the spill and the nature and extent of exposure to that oil experienced by biota and habitats.
- Section 4.3 (Toxicity) describes the toxicity of *Deepwater Horizon* oil to natural resources and summarizes the results of the Trustees' comprehensive toxicity testing program.
- Sections 4.4 through 4.10 describe the injury assessment for specific resources, habitats, and services, as follows: water column resources (Section 4.4); benthic (i.e., bottom-dwelling) resources and habitats (Section 4.5); nearshore marine ecosystem (Section 4.6); birds (Section 4.7); sea turtles (Section 4.8); marine mammals (Section 4.9); and lost recreational use (Section 4.10).
- Section 4.11 (Injury Assessment: Summary and Synthesis of Findings) summarizes the Trustees' injury assessment findings and synthesizes those conclusions in an ecosystem context.

**Chapter 5 (Restoring Natural Resources)** provides the Trustees' approach to restoration planning and evaluates the restoration alternatives, including the preferred alternative of comprehensive, integrated ecosystem restoration.

- Section 5.1 (Bridging Injury to Restoration) presents the wide-ranging injuries identified in

Chapter 4 as an ecosystem-level injury and ties this injury to the Trustees' preferred alternative for restoration, which is an ecosystem-level approach.

- Section 5.2 (Overarching Trustee Restoration Planning Approach, OPA Requirements) describes the Trustees' overall approach to restoration planning.
- Section 5.3 (Trustee Programmatic Goals, Purpose, and Need) describes the Trustees' overarching goals, purpose, and need for restoration.
- Section 5.4 (Approach to Developing and Evaluating Alternatives) describes the Trustees' process for developing restoration alternatives, which is a required step under the OPA and NEPA statutes that guide Trustee action.
- Section 5.5 (Alternative A: Comprehensive, Integrated Ecosystem Restoration [Preferred Alternative]) describes the Trustees' preferred alternative of comprehensive, integrated ecosystem restoration. It introduces each of the Restoration Types that together form a comprehensive, integrated approach to restoration.
- Sections 5.6, 5.7, and 5.8 describe the three other restoration planning alternatives considered by the Trustees.
- Section 5.9 (Comparative OPA Evaluation of Action Alternatives) compares the two action alternatives and explains why the Trustees selected comprehensive, integrated restoration as their preferred alternative.
- Section 5.10 (Summary of the Preferred Alternative and Funding Allocations) summarizes the preferred alternative, presents the funding allocation to each Restoration Type in defined Restoration Areas, provides a sense of the restoration potential associated with that funding, and describes the process for subsequent restoration planning.

**Chapter 6 (Environmental Consequences and Compliance with Other Laws)** describes the predicted consequences, or effects, of implementing PDARP/PEIS restoration alternatives proposed in Chapter 5, Restoring Natural Resources, on the physical, biological, and socioeconomic environment as required by NEPA.

**Chapter 7 (Governance)** presents the Trustees' governance approach for implementing the preferred alternative.

**Chapter 8 (Public Comment on the Draft PDARP/PEIS and Responses)** provides the public comments received on the Draft PDARP/PEIS and the Trustees' responses to those comments.

## OPA and NEPA Requirements: The Basics

### What Is the Oil Pollution Act of 1990 (OPA)?

The Oil Pollution Act of 1990 (OPA) (33 U.S.C. 2701 *et seq.*) is a law enacted by Congress in 1990, partly in response to the *Exxon Valdez* oil spill in 1989. OPA amends the Clean Water Act and addresses problems associated with preventing, responding to, and paying for oil pollution incidents in navigable waters, adjoining shorelines, and the exclusive economic zone of the United States. It created a comprehensive prevention, response, liability, and compensation regime to deal with vessel- and facility-caused oil pollution to U.S. navigable waters. The goal of OPA is to make the environment and public whole for injuries to natural resources and services resulting from an incident involving a discharge of oil or a substantial threat of a discharge of oil.

### Under OPA, Who Acts for the Public and Why?

OPA provides for federal and state agencies (and federally recognized Indian Tribes) to act as **trustees** for natural resources on behalf of the public. Under OPA, the designated trustees develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent of the injured natural resources under their trusteeship (collectively referred to as “restoration”).

### Under OPA, Who Is Liable and What Are “Damages”?

Under OPA, liabilities to be borne by the responsible parties include “damages for injury to, destruction of, loss of, or loss of use of, natural resources [land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources], including the reasonable costs of assessing the damage.” This means that the responsible parties must pay the costs of identifying the injuries and restoring natural resources injured by the spill, including compensating for any loss in value of natural resources from the time of injury until the resources are restored. Responsible parties are also liable for the costs of cleaning up spilled oil (or other contaminants).

### What Is a Natural Resource Damage Assessment?

Under OPA, an NRDA is conducted to determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of an oil spill.

OPA regulations define a process for injury assessment and restoration planning consisting of three phases: preassessment, injury assessment/restoration planning, and restoration implementation (15 CFR§ 990). The trustees also develop a **restoration plan** that outlines alternative approaches to make the public whole for the injuries to natural resources and the loss of services. The final step of an NRDA is to implement restoration and monitor its effectiveness. Trustees solicit public comment on proposed restoration plans and then select and implement restoration projects.

### What Is the National Environmental Policy Act (NEPA)?

The National Environmental Policy Act (NEPA), enacted in 1969, establishes procedural

requirements for federal agencies and ensures fully informed and well-considered decisions by requiring federal agencies to consider the environmental impacts of their major proposed actions and reasonable alternatives to those actions.

### **What Is an Environmental Impact Statement (EIS)?**

NEPA's implementing regulations (40 CFR §§ 1500 *et seq.*) specify that federal agencies must prepare an Environmental Impact Statement for certain proposed actions "significantly affecting the quality of the human environment." For an NRDA restoration plan, the purpose of the EIS is to involve the public and facilitate the decision-making process in the federal trustees' analysis of alternative approaches to restoring injured natural resources and services.

### **How Are NEPA and OPA Related?**

OPA regulations require that restoration planning actions undertaken by federal trustees comply with NEPA and its implementing regulations. The OPA regulations specify that a Draft Restoration Plan/EIS should be prepared when the restoration is anticipated to have a significant impact on the quality of the human environment.

### **What Is a "Programmatic" EIS?**

A federal agency may prepare a programmatic EIS (PEIS) to evaluate broad actions (rather than site- or project-specific actions). When a federal agency prepares a PEIS, the agency may "tier" subsequent narrower environmental analyses on site-specific plans or projects from the PEIS to eliminate repetitive discussions and to focus on project-specific issues for each level of environmental review.

### **Where Can I Find the Text of OPA, NEPA, and the NRDA and NEPA Regulations?**

- OPA can be accessed at <http://www.epw.senate.gov/opa90.pdf>.
- The NRDA regulation can be accessed at [http://www.ecfr.gov/cgi-bin/text-idix?tpl=/ecfrbrowse/Title15/15cfr990\\_main\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idix?tpl=/ecfrbrowse/Title15/15cfr990_main_02.tpl).
- NEPA can be accessed at [https://ceq.doe.gov/laws\\_and\\_executive\\_orders/the\\_nepa\\_statute.html](https://ceq.doe.gov/laws_and_executive_orders/the_nepa_statute.html).
- The NEPA regulations can be accessed at [https://ceq.doe.gov/ceq\\_regulations/regulations.html](https://ceq.doe.gov/ceq_regulations/regulations.html).

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## 1.9

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## 5. Restoring Natural Resources

restoration ideas and options into restoration approaches, and 3) initially evaluate restoration approaches for suitability under the NRDA. Consistent with OPA (15 CFR § 990.53 [a][2]), the screening process evaluated the feasibility and applicability of restoration options in restoring injured natural resources.

To develop the restoration approaches for consideration, the Trustees identified restoration ideas and options from a variety of information sources. These information sources included public scoping comments (described in Section 5.4.3, Early Restoration), regional restoration planning documents (including plans developed by co-Trustees, nongovernmental organizations, academia, and other sources), ideas submitted in a project submittal database, Trustees' agency and resource-specific restoration expertise, and restoration categories evaluated and reviewed by the public as part of DWH Early Restoration planning (described in Section 5.4.3, Early Restoration). This screening process is further described in Appendix 5.C, Restoration Screening Overview.

## Restoration Approaches

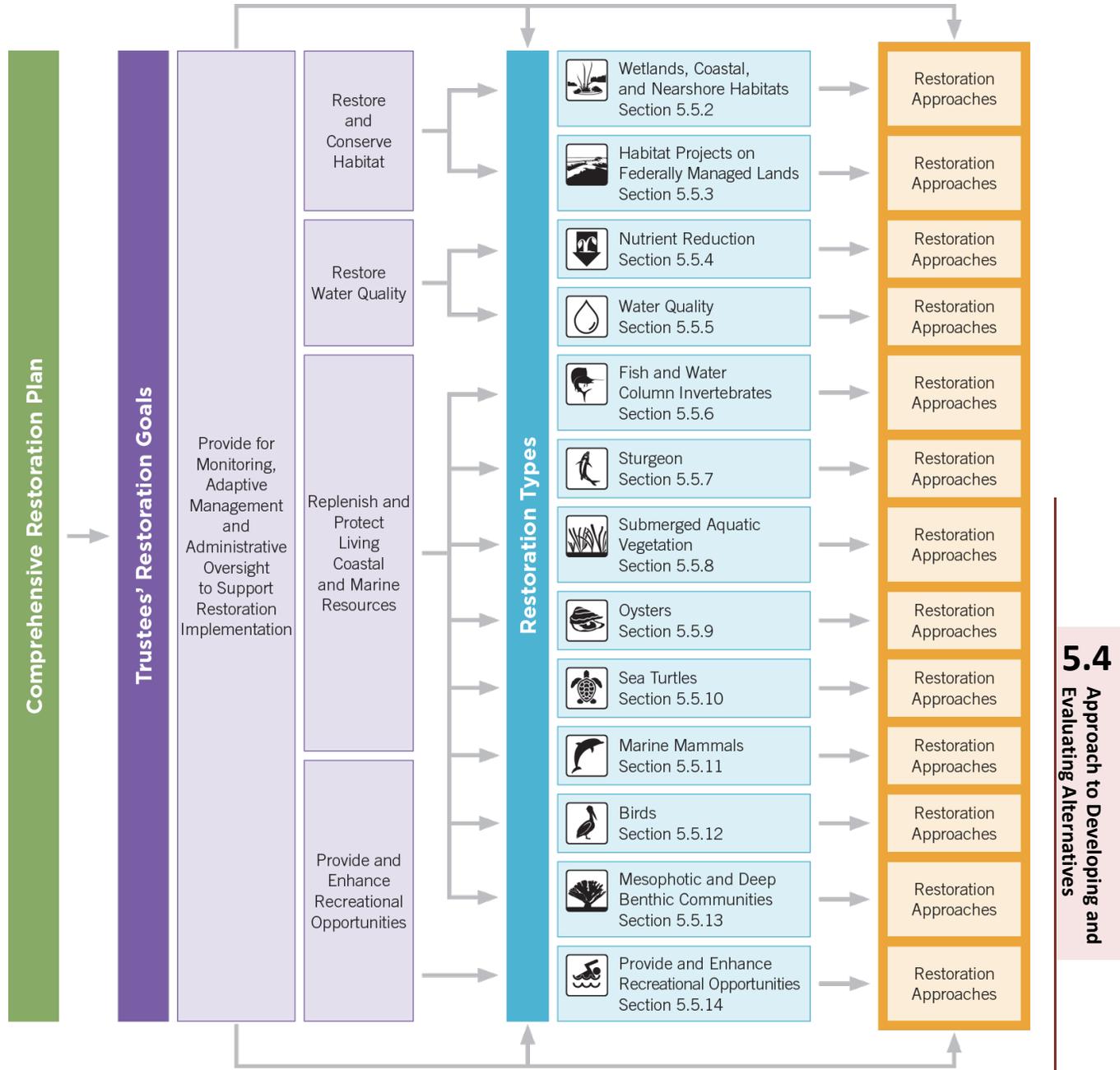
The restoration approaches organize restoration ideas from multiple sources in ways that are meaningful for evaluation under both OPA and NEPA. The restoration approaches describe options for implementation, and some include techniques and provide examples for specific methods. The restoration approaches are not necessarily intended to stand alone. They may be used in combination to develop projects that maximize benefits for injured resources.

### 5.4.5 Developing Restoration Types Based on Injury

The Trustees identified the set of Restoration Types that make up Alternatives A and B based on their understanding of 1) the injuries that resulted from the DWH spill and 2) the ecosystem setting of the northern Gulf of Mexico, including linkages between habitats and resources. Since the Restoration Types define the range of actions needed to fully restore for this spill, any comprehensive restoration plan selected by the Trustees at this time must include all these Restoration Types.

Restoration Types are nested within the following four programmatic restoration goals (see Figure 5.4-1):

- Under the goal of **Restore and Conserve Habitat**, the Trustees identified two Restoration Types: 1) Wetlands, Coastal, and Nearshore Habitats and 2) Habitat Projects on Federally Managed Lands. These Restoration Types will benefit injured coastal and nearshore habitats, as well as many injured species of fish and invertebrates in the water column, marine mammals, and birds, by providing food, shelter, breeding, and nursery habitat.
- Under the goal of **Restore Water Quality**, the Trustees identified two Restoration Types: 1) Nutrient Reduction and 2) Water Quality (a more general Restoration Type designed to address broader water quality degradation). The Trustees included these Restoration Types because they recognized that water quality improvements benefit recreational uses as well as contribute to the overall health and resiliency of coastal ecosystems.



**5.4**  
Approach to Developing and  
Evaluating Alternatives

**Figure 5.4-1.** The Trustees’ comprehensive restoration plan showing the goals and their related Restoration Type(s) connecting to restoration approaches, with monitoring, adaptive management, and administrative oversight planned throughout all Restoration Types.

- Under the goal of **Replenish and Protect Living Coastal and Marine Resources**, the Trustees identified eight different resource-focused Restoration Types, each of which is intended to benefit species and life stages that have specific restoration needs or weaker linkages with nearshore habitats.
- Under the goal of **Provide and Enhance Recreational Opportunities**, the Trustees identified a single Restoration Type (Provide and Enhance Recreational Opportunities) to directly benefit lost recreational uses of the Gulf of Mexico’s natural resources and habitats due to the DWH spill.

Nested within the programmatic goals described in Section 5.3.1, Programmatic Trustee Goals, each Restoration Type (see Sections 5.5.2 through 5.5.14) has specific restoration goals and a strategy to achieve those goals, which includes identifying a set of restoration approaches. In addition, the Trustees’ fifth goal, **Provide for Monitoring, Adaptive Management, and Administrative Oversight to Support Restoration Implementation**, supports each Restoration Type and informs overall decision-making within the Trustees’ adaptive management framework. The Trustees will ensure that subsequent plans and selected projects continue to support the goals of each Restoration Type and contribute to the programmatic Trustee goals and objectives.

#### 5.4.6 The Trustees’ Alternatives

Using all the information collected through the efforts outlined above, the Trustees developed a reasonable range of alternatives. The Restoration Types and restoration approaches are building blocks for comprehensive restoration plan alternatives, which also must meet the Trustees’ programmatic goals, described above. These alternatives reflect different approaches to comprehensive restoration planning, and each is defined by an overarching restoration planning philosophy and rationale. The alternatives developed and evaluated in this Final PDARP/PEIS are as follows:

- Alternative A (described in Section 5.5) is an integrated restoration portfolio that emphasizes the broad ecosystem benefits that can be realized through coastal habitat restoration in combination with resource-specific restoration in the ecologically interconnected northern Gulf of Mexico ecosystem. The Trustees have identified Alternative A as their preferred alternative.
- Alternative B (described in Section 5.6) is a resource-specific restoration portfolio that emphasizes close, well-defined relationships between injured resources and the Restoration Types. Restoration focuses on restoring as directly as practical for assessed injuries.
- Alternative C (described in Section 5.7) defers restoration plan development at this time, in favor of continued injury assessment. A comprehensive restoration plan would be proposed when greater scientific understanding of the injury determination is achieved.
- Alternative D (described in Section 5.8) is the natural recovery/no-action alternative, which the Trustees are required to evaluate under OPA and NEPA. Under this alternative, Early Restoration would be the only restoration implemented; no additional restoration under NRDA would be done by Trustees to accelerate the recovery of injured natural resources or to compensate for lost services.

## 5.9 Comparative OPA Evaluation of Action Alternatives

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The OPA evaluation standards (Section 5.4.7, Evaluation of Alternatives Under OPA) are used to compare the action alternatives (Alternatives A, B, and C). This comparative evaluation is supported by the consideration of the environmental consequences of the alternatives, which are presented in Chapter 6, Environmental Consequences and Compliance with Other Laws. The section below first evaluates Alternative C and describes why deferring restoration plan development is not preferred. A more detailed evaluation comparing Alternatives A and B is presented, and, based on this evaluation, the Trustees identify the preferred alternative.

As described in Chapter 1, the Trustees are, in part, evaluating a programmatic decision regarding how natural resource damage settlement funds in the amount of \$8.1 billion (plus up to \$700 million for adaptive management for unknown conditions) would be used for restoration to address the natural resource injuries described in this document. Each action alternative emphasizes a different comprehensive restoration planning philosophy. These programmatic alternatives are evaluated and compared below. Based on these OPA evaluations and the Trustees' finding that Alternative A best meets the Trustees' goals, Section 5.10 further develops and describes the specific funding allocations for that preferred alternative.

### 5.9.1 Alternative C

Alternative C describes continuing assessment, evaluation, and modeling of injuries to increase the certainty of the injury assessment prior to conducting restoration planning. This alternative is a reasonable option for the Trustees, because it would address scientific uncertainties associated with the assessment, and a restoration plan to compensate for injuries would be proposed in the future. However, the Trustees must consider whether continued assessment is preferable to developing a comprehensive restoration plan at this time.

Deferring restoration action and continuing assessment would increase scientific certainty regarding the injury quantification for some of example species and would enable more precise restoration scaling for these directly measured resources. However, continued assessment has some disadvantages including the following:

- Further study would incur higher assessment costs.
- Continued assessment would cause substantial delays in restoration implementation beyond Early Restoration, which would lead to further losses in natural resources and their services.
- Further study may not substantially change the understanding of the nature or extent of certain injuries regardless of the length of time or amount of funding devoted to further study. This is due to the inherent difficulties in studying many oceanic systems and the time that has already passed since the spill. Although further study might be able to provide more certainty to the injury quantification, the Trustees do not expect that the increased degree of certainty would change the Trustees' restoration approach.

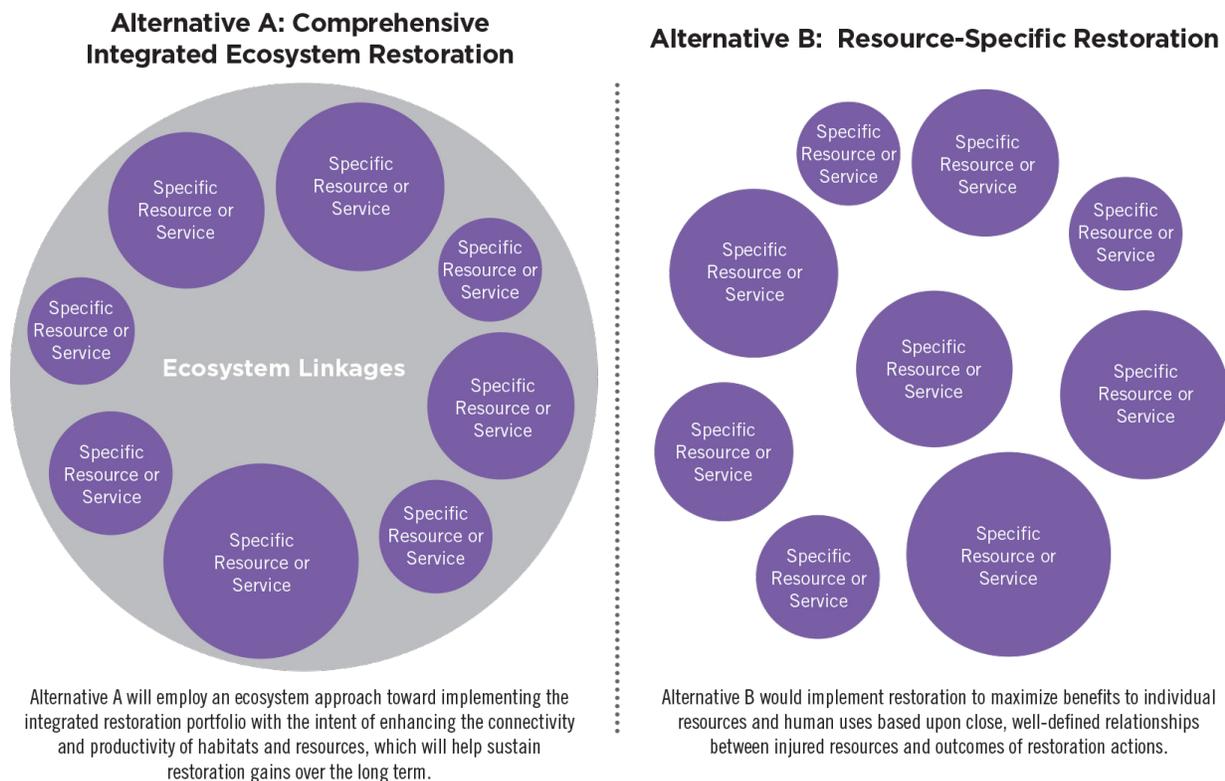
Given the reduction in funds available for restoration and the delay in implementing restoration, Alternative C would not be as successful as Alternatives A or B in meeting the Trustees' goals for returning the injured natural resources and services to baseline and/or compensating for interim losses. In addition, due to the magnitude and nature of the DWH incident, the assessment and evaluation of all potentially injured natural resources in all oiled locations would remain scientifically and financially implausible. The Trustees find that the goals of this Final PDARP/PEIS can be met without fully resolving all uncertainty. The Trustees conclude that the best path forward is to initiate comprehensive restoration now, rather than delay it in an effort to better quantify the injury. Based on this evaluation, the Trustees do not prefer Alternative C.

### 5.9.2 Alternatives A and B

The Trustees next compared Alternatives A and B. Both action alternatives are composed of a restoration portfolio that 1) meets the four programmatic goals of benefiting habitat, water quality, living coastal and marine resources, and recreational use; 2) includes the Restoration Types identified based on injury; and 3) distributes that restoration across the five states, federal lands, and nearshore and offshore waters. Additionally, the Trustees' action alternatives meet the fifth goal by including monitoring, adaptive management, and adaptive management for unknown conditions. The Trustees would also factor in contingencies to address future unknown conditions, given the unprecedented scale of restoration required and the number of years that it will take to implement this plan. However, the Trustees' restoration planning under Alternatives A and B differ in their emphasis on coastal habitat restoration and ecological interconnectivity compared to their emphasis on living coastal and marine resources.

Alternative A will employ an ecosystem approach toward implementing the integrated restoration portfolio with the intent of enhancing the connectivity and productivity of habitats and resources, which will help sustain restoration gains over the long term. The recognition of the key role of coastal habitats in the interconnected Gulf of Mexico ecosystem helps ensure that multiple resources will benefit from restoration and that reasonably inferred but unquantified injuries are likely to be addressed. To achieve the desired portfolio of restoration approaches, the emphasis on coastal habitat restoration will be complemented by additional restoration for living coastal and marine resources and recreational uses to ensure that all injured resources are fully compensated. This combination of implementing restoration across resource types and emphasizing coastal habitat restoration, plus robust monitoring and adaptive management, creates a restoration portfolio that maximizes the likelihood of providing long-term benefits to all resources and services injured by the spill.

Alternative B would implement more direct, resource-specific restoration, shifting the restoration emphasis from the goal Restore and Conserve Habitats to the goal Replenish and Protect Living Coastal and Marine Resources. However, since Alternative B emphasizes living coastal and marine resources and, correspondingly, reduces the emphasis on coastal habitat restoration, the Trustees are less certain that Alternative B would successfully restore for the reasonably inferred but unquantified injuries described in Chapter 4. The strong, but indirect, ecological linkages between habitats and species injured by the spill would be ancillary, rather than primary, benefits under Alternative B. Figure 5.9-1 provides a depiction of Alternative A and Alternative B.



**Figure 5.9-1.** Depiction of the comprehensive integrated ecosystem restoration approach of Alternative A and the resource-specific restoration approach of Alternative B.

The Trustees find that Alternatives A and B are both consistent with the Trustees’ programmatic goals. Table 5.9-1 provides a comparative analysis of Alternatives A and B using a subset of the OPA Evaluation Standards at 40 CFR 990.54(a)-(f) that are most meaningfully differentiated at this programmatic level.

This evaluation provides sufficient information for the Trustees to determine that Alternative A is preferred, as it best meets the Trustees’ goals, purpose, and need for restoration.

**Table 5.9-1.** Comparative analysis of Alternatives A and B using the OPA evaluation standards.

OPA Evaluation Standard (990.54)	Alternative A: Comprehensive Integrated Ecosystem Restoration	Alternative B: Resource-Specific Restoration
The cost to carry out the alternative	Costs will be more effectively developed and compared in subsequent project-specific restoration plans and are thus not discussed here.	
The extent to which each alternative is expected to meet the Trustees' goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses	Meets all the Trustees' programmatic goals by establishing a restoration portfolio that includes restoration for habitats, water quality, living coastal and marine resources, and recreational use to compensate for all injuries. This alternative best achieves the Trustees' goals and objectives through emphasis on restoring highly productive coastal habitats, which provide food and shelter for a wide array of resources affected by the spill. This alternative explicitly recognizes the importance of coastal habitats to the physical and biological interconnectivity of the Gulf ecosystem and is more likely than Alternative B to address both documented and reasonably inferred but unquantified injuries.	Meets all the Trustees' programmatic goals by establishing a restoration portfolio that includes restoration for habitats, water quality, living coastal and marine resources, and recreational use to compensate for all injuries. This alternative emphasizes direct restoration to compensate for assessed injuries. This alternative will fully compensate for injuries, but is less certain than Alternative A in addressing reasonably inferred but unquantified injuries.
The likelihood of success of each alternative	The alternatives draw from the same set of Restoration Types and restoration approaches. Many identified restoration approaches are well established and have a high likelihood of success. Section 5.5, Alternative A: Comprehensive Integrated Ecosystem Restoration (Preferred Alternative), notes where novel approaches are identified and that key uncertainties associated with restoration success will be evaluated thoroughly at the project-specific level. Both alternatives incorporate monitoring, assessment, and science support to ensure that needed corrective actions are taken and that a science-based decision-making framework is in place to increase the overall likelihood of success.	
The extent to which each alternative will prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative	The potential for preventing future injury and for avoiding collateral injury depends on the specific projects and project locations proposed in subsequent restoration plans; this issue is thus not discussed further here.	
The extent to which each alternative benefits more than one natural resource and/or service	Due to the nature and extent of the injury, the alternatives must address multiple natural resources and services. This alternative includes a substantial amount of restoration for coastal habitats to ensure broader ecosystem benefits (e.g., food, shelter, and spawning areas) to multiple injured resources. This alternative also emphasizes restoring habitats in combination with one another to achieve multiple, and potentially synergistic, benefits and considers restoration approaches that can produce large-scale benefits across multiple resources to support resiliency and sustainability.	Due to the nature and extent of the injury, the alternatives must address multiple natural resources and services. This alternative does not offer the same assurances that substantial restoration will be undertaken for coastal habitats. Therefore, the broader ecosystem benefits would be ancillary. This alternative also does not emphasize habitats in combinations or using restoration approaches that can have large-scale benefits across multiple resources.
The effect of each alternative on public health and safety	Effects on public health and safety are most effectively evaluated at the project-specific level. Thus, this criterion was not used to compare alternatives in this plan.	

## **6. Environmental Consequences and Compliance with Other Laws**

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# 7. Governance

### What Is in This Chapter?

- **Introduction (Section 7.1):** What are the Trustees' responsibilities on behalf of the public in developing and implementing restoration?
- **Management Structure (Section 7.2):** How are the Trustees organized and what are the overall roles and responsibilities of the Trustee Council, Trustee Implementation Groups, and Individual Trustee Agencies?
- **Restoration Planning (Section 7.3):** What are the specific roles and responsibilities of the Trustee Implementation Groups, the Individual Trustee Agencies, and the Trustee Council with respect to overall restoration planning and consistency with this PDARP?
- **Restoration Implementation (Section 7.4):** What are the specific roles and responsibilities of the Trustee Implementation Groups, the Individual Trustee Agencies, and the Trustee Council with respect to leading restoration projects, ensuring projects are implemented consistent with final restoration plans, and tracking restoration progress?
- **Monitoring and Adaptive Management (Section 7.5):** What are the specific roles and responsibilities of the Trustee Implementation Groups, the Individual Trustee Agencies, and the Trustee Council with respect to monitoring restoration and ensuring that new information or changing conditions are considered?
- **Financial Management (Section 7.6):** What are the specific roles and responsibilities of the Trustee Implementation Groups, the Individual Trustee Agencies, and the Trustee Council with respect to managing and accounting for the use of natural resource damage monies for restoration activities?
- **Public Engagement and Restoration Tracking (Section 7.7):** How will the Trustees engage and inform the public to maintain an open and documented process for implementing restoration under this PDARP/PEIS?
- **References (Section 7.8)**

## 7.1 Introduction

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As specified in the Oil Pollution Act of 1990 (OPA),<sup>1</sup> natural resource trustees are designated to act on behalf of the public to:

- Assess and recover damages for the injury to, destruction of, and loss and lost use of natural resources caused by an oil spill and the services those resources provide.
- Develop and implement plans for the restoration, rehabilitation, replacement, or acquisition of the equivalent of the damaged natural resources under their trusteeship.
- Develop and implement these restoration plans after adequate public notice, opportunity for a hearing, and consideration of all public comment.
- Use recovered sums only to reimburse or pay the costs of assessing natural resource injuries and of developing and implementing these restoration plans.

Trustees fulfill these responsibilities by developing restoration plans, providing the public with meaningful opportunity to review and comment on proposed plans (including the information that supports that purpose), implementing and monitoring restoration projects, managing natural resource damage funds, documenting trustee decisions through a public Administrative Record (including those that involve the use of recovered damages), and providing for public involvement and transparency in keeping with the public responsibilities with which they have each been entrusted under OPA.

In keeping with these responsibilities, and in the context of the comprehensive, integrated ecosystem restoration plan identified as the preferred alternative, this chapter describes the Trustees' governance structure to implement restoration under this PDARP/PEIS. This chapter also describes procedures to guide the restoration process and establish transparency and public accountability of the Trustees' actions.

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<sup>1</sup> From 33 USC § 2706.

## 7.2 Management Structure

The magnitude and geographic scale of the restoration in this PDARP/PEIS is far greater than in any other prior undertaking by natural resource trustees. Because of this, and because of the programmatic restoration determinations described in Chapter 5, Restoring Natural Resources, the Trustees propose a governance structure to streamline restoration implementation and oversight. The Trustees will continue to function as a Trustee Council with overall responsibility for assuring that restoration is achieved with financial accountability and that obligations set forth in OPA, the Consent Decree, the Programmatic DARP, and future restoration plans are met. Trustee Council and Trustee Implementation Group (TIG) duties include restoration planning, restoration implementation, monitoring and adaptive management, financial management, public engagement, and restoration tracking. The Trustee Council will also assure that those Trustees assigned through this chapter carry out their duties fully to achieve restoration.

As such, the Trustees propose a distributed governance structure that assigns a TIG for each of the eight Restoration Areas (restoration in each of the five Gulf states, Open Ocean, Regionwide, and Unknown Conditions and Adaptive Management—consistent with Table 5-10.1 in Chapter 5). The Trustees believe that restoration can be carried out most efficiently by directly vesting restoration decision-making to those Trustees who have the strongest collective trust interests in natural resources and their services within each Restoration Area. Because these are shared public trust resources, with overlap in federal and state jurisdiction, both state and federal Trustees serve on the Trustee Council and within respective TIGs. The composition of each TIG varies, depending on the geographic area and Restoration Types to be performed in each Restoration Area, discussed below.

Specifically, the Trustees allocated restoration funds to the following:

- **Restoration Types.** The Trustees allocate funds using an integrated restoration portfolio that includes a substantive focus on restoring Gulf of Mexico coastal habitats as well as improving water quality in priority watersheds, protecting and restoring living coastal and marine resources, and enhancing recreational use opportunities. Integrated ecosystem restoration best meets the programmatic goals established in Chapter 5, Restoring Natural Resources. Restoration funds are allocated to specific Restoration Types.
- **Restoration Areas.** The Trustees allocate specific funding to seven geographic areas: each of the five Gulf states, Regionwide, and Open Ocean. Some additional funds will be reserved for an eighth Restoration Area, Unknown Conditions and Adaptive Management. This allocation reflects where restoration implementation for the various Restoration Types is most appropriate. The funds allocated to Restoration Areas include funding for monitoring, adaptive management, and administrative oversight.

Generally, administrative oversight will be funded as follows:

- The state Trustees will support their individual Trustee non-project specific responsibilities on all TIGs and the Trustee Council using the administrative oversight and comprehensive planning funds allocated to their respective state-specific TIGs.

- The federal Trustees will support their individual Trustee non-project specific responsibilities on all TIGs and the Trustee Council using the Open Ocean TIG Administrative Oversight and Comprehensive Planning funds.
- Collective administrative work (e.g. LAT responsibilities and website hosting) conducted on behalf of the Trustee Council and TIGs will be funded from the Regionwide Administrative Oversight and Comprehensive Planning funds.

The general division of responsibilities between the TIGs and the Trustee Council is as follows:

- The TIGs' function will primarily be planning, deciding on, and implementing restoration, including monitoring and adaptive management. Each TIG will make all restoration decisions for the funding allocated to its Restoration Area on a consensus basis (decision-making described below).
- The Trustee Council's function will primarily be to ensure coordination and efficiency across the TIGs by establishing procedures and practices needed to standardize or provide for consistency of some TIG activities. These activities include financial management, public information availability, and other activities identified in the sections below; aggregating and disseminating information to the TIGs; facilitating use of existing tracking tools; and facilitating the TIGs' ability to implement the ecosystem-wide restoration goals of this PDARP/PEIS.

Under this restoration planning structure, the Trustees recognize the need to establish agreements and procedures<sup>2</sup> such as:

- **Memoranda of Understanding (MOUs) (and/or Memoranda of Agreement [MOAs]).** The Trustees will revise their existing MOU for the Trustee Council that forms the basis of Trustee coordination and cooperation under this PDARP/PEIS. The Trustee Council MOU will be followed by each TIG and Trustee member. The TIGs, at their discretion, may develop additional MOUs for their respective Restoration Areas, provided TIG MOUs are consistent and compliant with the Trustee Council MOU.
- **Standard Operating Procedures (SOP).** Consistent with, and in support of, the Trustee Council MOU, the Trustee Council will develop SOP for administration, implementation, and long-term management of restoration under this PDARP/PEIS. The Trustee Council SOP will document the overall structure, roles, and decision-making responsibilities of the Trustee Council. The Trustee Council SOP will also provide the common procedures to be used by all TIGs. Each TIG may develop additional SOP for their respective Restoration Areas, provided they are consistent with the Trustee Council SOP. The Trustee Council SOP will be in place prior to any TIG's withdrawal of funds from the U.S. Department of Interior (DOI) Natural Resources Damage Assessment and Restoration (NRDAR) Fund (see Section 7.6, Financial Management). The Trustee Council SOP will include, but will not necessarily be limited to, the following topics:

<sup>2</sup> Upon completion, final MOUs (Trustee Council and TIG) and SOP (Trustee Council and TIG) will be made publicly available in the Administrative Record.

- Trustee Council structure and management (e.g., Lead Administrative Trustee responsibilities).
- Decision-making and delegation of authority.
- Funding.
- Administrative procedures.
- Project reporting.
- Conflict resolution.
- Monitoring and adaptive management.
- Consultation opportunities among the Trustees.
- Public participation.
- Administrative accounting and independent auditing procedures.
- Administrative Record.

These SOP will be developed and approved by consensus of the Trustee Council, or TIGs for TIG-specific SOP, and may be amended as needed. Final Trustee Council and TIG SOP, and updates to these SOP, will be made available to the public on the Trustee Council and/or TIG websites.

The division of responsibilities among the Trustee Council, TIGs, and Individual Trustee Agencies is summarized in Table 7.2-1. The following sections provide more detailed descriptions of the composition and roles of the TIGs and the Trustee Council, along with those of Individual Trustee Agencies, in implementing this PDARP/PEIS.

## 7.2

### Management Structure

**Table 7.2-1.** Trustee Council, TIG, and Individual Trustee Agency responsibility matrix.

		Trustees' Governance Structure		
		Trustee Council	TIGs	Individual Trustee Agencies
<b>Responsibilities</b>	<b>Restoration Planning</b>	Aggregates status of TIG restoration planning, maintains web portals, makes planning information publicly available, compiles the planning Administrative Record, and coordinates with other <i>Deepwater Horizon</i> Restoration Programs (i.e., RESTORE and Gulf Environmental Benefit Fund).	Develop draft and final restoration plans/environmental reviews (environmental assessments and environmental impact statements), coordinate environmental compliance, select projects, provide for public engagement within the Restoration Area, and maintain materials for the planning Administrative Record.	Prepare project-level conceptual designs, costs, plans, analyses, and environmental compliance documentation.
	<b>Restoration Implementation</b>	Aggregates restoration program status tracking, publicly reports overall PDARP/PEIS restoration implementation, and compiles the implementation Administrative Record.	Track Restoration Area project implementation progress and report by Restoration Type, and maintain materials for the implementation Administrative Record.	Carry out project implementation and contracting (all phases—planning, engineering and design, construction, monitoring, and long-term management), and report implementation status to their TIG.
	<b>Monitoring and Adaptive Management</b>	Aggregates restoration program monitoring information and performance, makes information publicly available, compiles administrative record, and adaptively manages the overall PDARP/PEIS restoration program.	Track and aggregate Restoration Area monitoring data and reporting to the Trustee Council by Restoration Type, conduct environmental reviews, oversee corrective actions and development of adaptive management plans, and maintain materials for the Administrative Record.	Develop project-specific monitoring plans and conduct project-specific monitoring, data analysis, adaptive management, and reporting.
	<b>Financial Management</b>	Aggregates restoration program financial tracking, publicly reports use of funds across the restoration program, and compiles the Administrative Record, as applicable.	Track financial information for the Restoration Area, provide summarized financial reporting to the Trustee Council, and maintain materials for the Administrative Record.	Conduct project-level financial tracking through project completion, track project receipts and expenditures, and report use of funds to their TIG.

**7.2**  
Management Structure

### 7.2.1 Trustee Council

Pursuant to OPA § 1006(b),<sup>3</sup> the President designates the federal trustees, and the governor of each state designates state and local trustees who act on behalf of the public as trustees for natural resources. The Trustee Council is composed of Designated Natural Resource Trustee Officials (DNRTOs), or their alternates, for the following state and federal natural resource Trustee agencies:

- DOI, as represented by the United States Fish and Wildlife Service (USFWS), National Park Service (NPS), and Bureau of Land Management (BLM).
- The National Oceanic and Atmospheric Administration (NOAA), on behalf of the United States Department of Commerce.
- The United States Department of Agriculture (USDA).
- The United States Environmental Protection Agency (EPA).
- For the state of Texas, the Texas Parks and Wildlife Department (TPWD), Texas General Land Office (TGLO), and Texas Commission on Environmental Quality (TCEQ).
- For the state of Louisiana, the Coastal Protection and Restoration Authority (CPRA), Oil Spill Coordinator's Office (LOSCO), Department of Environmental Quality (LDEQ), Department of Wildlife and Fisheries (LDWF), and Department of Natural Resources (LDNR).
- For the state of Mississippi, the Department of Environmental Quality (MDEQ).
- For the state of Alabama, the Department of Conservation and Natural Resources (ADCNR) and Geological Survey of Alabama (GSA).
- For the state of Florida, the Department of Environmental Protection (FDEP) and Fish and Wildlife Conservation Commission (FWC).

The Trustee Council may designate dedicated support staff, as necessary, for conducting its business. The Trustee Council may establish a permanent operations structure, such as an executive directorate to conduct the day-to-day operations of the Council, promote coordination among its members, and facilitate voting among the Trustees. Support staff and operational structure may also serve as resources across the TIGs to promote efficiency and exchange of information.

The Trustee Council will designate a Lead Administrative Trustee(s), in accordance with 15 CFR § 990.14, to promote coordination of administrative functions of the Trustee Council, such as procuring contracts to support Trustee Council functions, facilitating financial management requirements, and organizing and maintaining the publicly available Administrative Record (see Section 7.7, Public Engagement and Restoration Tracking) of the Trustees' restoration planning and implementation actions. All decisions of the full Trustee Council will be by consensus, which requires agreement by all nonabstaining federal

<sup>3</sup> The federal Trustees for this spill are designated pursuant to 33 USC § 2706(b)(2); Executive Orders 12777 and 13626; and 77 FR 56749.

Trustees and all nonabstaining Gulf states (as decided for each Gulf state by the state Trustees as a group).

## 7.2.2 Trustee Implementation Groups

TIGs are composed of Individual Trustee Agency representatives designated by the respective Trustee Council DNRTOs (Figure 7.2-1 below). The TIGs develop plans for, choose, and implement specific restoration actions under this PDARP/PEIS. Each TIG ensures their actions are fully consistent with this PDARP/PEIS and SOP. The TIGs are constituted as follows:



**Figure 7.2-1.** Composition of the TIGs.

1. **Restoration in Alabama.** This TIG will be responsible for planning and implementing restoration activities for Restoration Types described in Table 5-10.1 in Chapter 5, Section 5.10 (Summary of Preferred Alternative and Funding Allocations), to benefit resources within the geographic jurisdiction of the state of Alabama. This TIG shall comprise the natural resource Trustees for the state of Alabama and the federal Trustees.
2. **Restoration in Florida.** This TIG will be responsible for planning and implementing restoration activities for Restoration Types described in Table 5-10.1 in Chapter 5, Section 5.10, to benefit resources within the geographic jurisdiction of the state of Florida. This TIG shall comprise the natural resource Trustees for the state of Florida and the federal Trustees.
3. **Restoration in Louisiana.** This TIG will be responsible for planning and implementing restoration activities for Restoration Types described in Table 5-10.1 in Chapter 5, Section 5.10, to benefit resources within the geographic jurisdiction of the state of Louisiana. This TIG shall comprise the natural resource Trustees for the state of Louisiana and the federal Trustees.
4. **Restoration in Mississippi.** This TIG will be responsible for planning and implementing restoration activities for Restoration Types described in Table 5-10.1 in Chapter 5, Section 5.10, to benefit resources within the geographic jurisdiction of the state of Mississippi. This TIG shall comprise the natural resource Trustee for the state of Mississippi and the federal Trustees.
5. **Restoration in Texas.** This TIG will be responsible for planning and implementing restoration activities for Restoration Types described in Table 5-10.1 in Chapter 5, Section 5.10, to benefit

resources within the geographic jurisdiction of the state of Texas. This TIG shall comprise the natural resource Trustees for the state of Texas and the federal Trustees.

6. **Open Ocean.** This TIG will be responsible for planning and implementing restoration activities for resources primarily in the Open Ocean Restoration Area, which includes Restoration Types described in Table 5-10.1 in Chapter 5, Section 5.10. Open Ocean funding will also support federal Trustee administrative and preliminary planning activities across all TIGs. This TIG shall comprise the federal Trustees.
7. **Regionwide.** This TIG will be responsible for planning and implementing restoration activities for resources that range throughout the Gulf, which include Restoration Types described in Table 5-10.1 in Chapter 5, Section 5.10. This TIG shall comprise all state and federal Trustees.
8. **Unknown Conditions and Adaptive Management.** Funding is set aside for future use to provide for additional adaptive management of the restoration program or to plan and implement restoration that addresses injuries or conditions that were unanticipated or unknown when this PDARP/PEIS was finalized. This TIG will comprise all state and federal natural resource Trustees. This TIG's function is separate from, but informed by, the continual monitoring and adaptive management that each of the above TIGs conduct as part of their overall restoration implementation responsibilities (see Section 7.5, Monitoring and Adaptive Management; for more detail on monitoring and adaptive management activities, see Appendix 5.E, Monitoring and Adaptive Management Framework).

The responsibilities of each TIG are described in greater detail in the remainder of this chapter. Depending on its needs, each TIG may establish subgroups to support and assist meeting its responsibilities (e.g., financial representatives to advise on issues related to financial administration and/or technical representatives to advise on issues related to restoration program implementation).

Each TIG will develop, select, and implement projects on a consensus basis. For the five TIGs for each of the five Gulf states, consensus requires that a proposed action or decision be supported by both the United States (as decided by the federal Trustees as a group) and the state (as decided by the state Trustees as a group). The federal Trustees will develop an MOU setting forth an approach and procedures pursuant to which the federal Trustees speak with a single voice on decisions made within the TIGs for each of the five Gulf states; the state Trustees for each state will develop an MOU setting forth an approach and procedures pursuant to which their state Trustees speak with a single voice on decisions made by the five TIGs for each of the five Gulf states. For the TIGs for the Regionwide and Unknown Conditions and Adaptive Management Restoration Areas, consensus requires that a proposed restoration action be supported by all nonabstaining federal Trustees and all nonabstaining Gulf states (as decided for each Gulf state by the state Trustees as a group). For the Open Ocean Restoration Area, consensus requires that a proposed restoration action be supported by all nonabstaining federal Trustees.

TIGs should seek to resolve any disputes, including those regarding an established SOP, within the TIG in a timely manner. However, if a dispute about a substantial matter arising from within a TIG remains

unresolved, any Trustee within that TIG may seek guidance from the full Trustee Council through a nonbinding, nonvoting executive session discussion.

### **7.2.3 Individual Trustee Agencies**

Individual Trustee Agencies will prepare project-specific information and implement projects, including executing contracts, conducting project-specific monitoring, and tracking project-specific expenditures, as authorized by the respective TIG. The TIG will designate one or more Individual Trustee Agencies as Implementing Trustee(s) for each selected restoration project. An Implementing Trustee may be designated for a project's entirety, or responsibility for a project's various implementation phases (e.g., engineering and design and construction) may be shared or divided among multiple Implementing Trustees.

## **7.2**

### **Management Structure**

## 7.3 Restoration Planning

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The Trustees developed this PDARP/PEIS at a programmatic level to guide and direct subsequent project-specific restoration plans. This section broadly describes the restoration planning responsibilities of the TIGs, the Individual Trustee Agencies, and the Trustee Council.

### 7.3.1 Trustee Implementation Groups

The TIGs will develop project-specific restoration plans for their respective Restoration Area consistent with the Restoration Type funding allocations (see Chapter 5, Section 5.10, Summary of Preferred Alternative and Funding Allocations). Over the full time period of restoration, each TIG ensures all Restoration Type goals are supported via the series of TIG restoration plans.<sup>4</sup> TIGs identify, develop, and evaluate project alternatives; propose projects in draft restoration plans; engage the public for comment on restoration plans; and select projects in final restoration plans (15 CFR 990.55). Each TIG will develop projects in accordance with the OPA regulations and other applicable requirements, including consistency with this PDARP/PEIS. General restoration planning procedures are described below. Additionally, during project planning, TIGs will coordinate with other TIGs or individual Trustees for proposed projects that overlap TIG Restoration Areas. The Open Ocean TIG will coordinate with other TIGs when proposed projects overlap their jurisdictions.

General planning procedures to be conducted by the TIGs include:

- **Initial project identification.** TIGs develop project ideas and conduct project screening consistent with the Restoration Type and the restoration approaches described in Chapter 5, Restoring Natural Resources, and its appendices. TIGs will consider a reasonable range of restoration alternatives (15 CFR 990.53[a][2]) in restoration plans (see below for “Draft Restoration Plan”).
- **Public involvement in project identification.** The TIGs will continue to provide opportunity for public input of project ideas. TIGs consider project ideas from the public and may hold public meetings and will maintain or update tools to collect project ideas, such as the existing project submission database and other Trustee portals.
- **TIG meetings for public input.** Each TIG will hold at least one annual TIG meeting (these may be virtual) focused on public engagement on the progress and future of PDARP/PEIS implementation in that Restoration Area, unless a TIG planning cycle calls for a different frequency. These TIG meetings can be coordinated with other restoration meetings, provided those meetings have a role for all TIG Trustees and for all Restoration Types that are under the purview of the TIG (e.g., in the Louisiana Restoration Area, the TIG may consider how to coordinate this annual TIG meeting with public meetings of the Coastal Protection and Restoration Authority Board).

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<sup>4</sup> The Trustee Council will maintain a website to allow for project idea submittals and provide information related to restoration plan development. This website will contain links to TIG websites and state and federal Trustee websites.

- **Notify the public at initiation of restoration plans.** The Council website will be updated to notify the public when a TIG is initiating a restoration plan. For example, the notification could describe, to the extent known, the Restoration Types and approaches (or projects, if applicable) to be considered, the context for the restoration plan in relation to other Gulf restoration programs, and the intended years of funding to be included in the restoration planning for each Restoration Type. Where a restoration plan will rely on or incorporate portions of a regional restoration plan, the TIG may use this step as an opportunity to notify the public of projects to be considered from regional restoration plans.
- **Project development.** The identification and development of potential projects will be consistent with the NRDA regulations and this PDARP/PEIS; and with one or more of the Restoration Type goals described in Chapter 5, Section 5.5, Alternative A: Comprehensive Integrated Ecosystem Restoration (Preferred Alternative). TIGs may develop additional project selection criteria that further the goals established in this PDARP/PEIS. The TIGs will review cost estimates<sup>5</sup> for each project so that the costs of the project and the consistency with programmatic goals can be considered and compared with other project alternatives. The Trustees may access their respective administrative funding for initial project identification. Funding for continued development of restoration projects (or for strategic frameworks discussed below) for inclusion in a restoration plan may be taken from allocations for the respective TIG Restoration Type to which that project applies, upon consensus of the Trustees in that TIG, as determined by the decision-making process described in Section 7.2. Particularly for complex planning efforts, the TIGs will consider whether an interim status update on the Council website is useful to keep the public apprised of the projects and alternatives anticipated to be included in an upcoming draft restoration plan. Each TIG determines when their respective projects are ready to be proposed and released in a draft restoration plan.
- **Payment schedule and frequency of restoration plans.** The frequency of restoration plans may vary by TIG. Each TIG may specify a restoration plan frequency in its specific procedures or may choose for a flexible planning schedule that brings forward proposed projects individually or in groups. A series of payments will be distributed to each TIG over the course of 15 years, proportional to the total amount allocated to each Restoration Area (see Chapter 5, Section 5.10). For example, a 15-year disbursement schedule in the Open Ocean TIG results in approximately \$80 million per year for implementation, administration, and monitoring for this TIG's Restoration Types. As such, TIGs have differing amounts of total restoration dollars available annually. Considering its respective payment schedule, each TIG can determine a project planning and funding schedule that most appropriately benefits the Restoration Types under the TIGs purview. Generally, it is anticipated that each TIG develop at least one restoration plan every 3 years, although this frequency is at the discretion of the TIGs. The restoration plans may include a varying number of specific restoration projects and may be developed jointly with other TIGs.

<sup>5</sup> Including, and where applicable, engineering and design, compliance and permitting, monitoring, land rights, construction, oversight, long-term maintenance and stewardship, contingency, etc.

- **Project phases.** The TIGs may propose to phase restoration projects. For example, a TIG may propose to fund a project’s initial engineering and design phase in order to develop the information necessary to fully consider the construction phase of that project in a future restoration plan. TIGs will encourage Individual Trustee Agencies to seek technical assistance from environmental regulatory agencies early in planning.
- **Draft restoration plans.** TIGs prepare draft restoration plans that document and provide sufficiently detailed information on the proposed project(s), or groups of projects, and alternatives to those projects. The draft plans also do the following:
  - Explain the consistency between the proposed plan and the PDARP/PEIS. For example, draft plans include information on the funding status by Restoration Type, the project screening process, the Restoration Type(s) goals each project contributes to, and how the planning and implementation considerations identified in Chapter 5, Restoring Natural Resources, and Appendix 5.D, Restoration Approaches and OPA Evaluation, were considered during project development.
  - Provide sufficient implementation detail for analysis under OPA, the National Environmental Policy Act (NEPA), and other environmental regulations, as appropriate to the project phase, including draft monitoring plans. TIGs strive to promote consistency in monitoring across similar project types by evaluating monitoring plans against a minimum standard of common performance criteria.
  - Generally describe whether the projects in that plan relate to any longer-term vision of that TIG or strategic framework for particular resources. Where relevant, the plans may describe the relation of the preferred project alternatives to projects proposed and/or being implemented under other Gulf restoration programs.
  - Describe the federal environmental compliance required for proposed projects (e.g., Endangered Species Act [ESA] consultations and Clean Water Act permits; see Chapter 6, Environmental Consequences and Compliance with Other Laws, for more detail), how those requirements will be met, and the compliance status (e.g., initiated or completed) at the release of the draft (and final) restoration plan. State and local environmental compliance coordination may also be identified. Where feasible, the TIGs may initiate compliance coordination early in the planning process to inform restoration decisions. The TIGs will ensure there is no irreversible or irretrievable commitment of resources to a project that has the effect of foreclosing alternative measures to restore and/or protect trust resources. When proposing projects to restore for ESA-listed species (e.g., sea turtles or sturgeon), the plans will describe consistency with ESA recovery plans and recovery goals for those species, if available, such that conservation programs are supported.
- **Corresponding NEPA analysis.** TIGs will integrate into draft and final restoration plans the appropriate level of NEPA analysis tiered from this PEIS (Chapter 6, Environmental Consequences and Compliance with Other Laws, provides additional detail on tiering). NEPA analyses must clearly state whether they are tiered Environmental Assessments or tiered

Environmental Impact Statements. For a tiered NEPA analysis, the Trustees must analyze the affected environment and environmental impacts with a focus on project-specific issues not addressed in this PEIS, and identify how the best practices appended to Chapter 6 were considered in developing projects. Lead and cooperating agencies must also be identified, including any cooperating agencies invited to participate. The details of the NEPA analysis will be commensurate with the project phase being considered.

- **Public engagement and public comment on draft restoration plans.** TIGs will provide an opportunity for public review and comment on each draft restoration plan and integrated NEPA analysis. Draft restoration plans are released and the public comment period noticed through the *Federal Register*, as well as by other means or public venues as deemed appropriate by the TIG (e.g., state registers). Generally, the intent of the TIGs is to engage the public at public meetings held on draft restoration plans.
- **Final restoration plans and corresponding NEPA analyses.** Following the consideration of public comments, the TIGs revise restoration plans and corresponding NEPA analyses, as appropriate. Final restoration plans clearly identify the projects that a TIG selects for implementation, after taking into consideration all public comments as well as the final environmental analyses under the NEPA process. Monitoring plans will be complete for final restoration plans and can be updated as appropriate during project implementation. Final restoration plans also identify the best practices applicable to the implementation of each selected project and any outstanding environmental compliance needs or other contingencies that must be resolved prior to project implementation. Final restoration plans will be made available on the Trustee Council website and in the administrative record.
- **Modifications to funding within Restoration Areas.** Any change to funding that is significant enough to constitute a modification of the PDARP/PEIS, within its respective Restoration Area, will be communicated to the Trustee Council. By agreement of the TIG, changes to the amount of funding to be spent on a Restoration Type within a Restoration Area may be made after the TIG proposes a revised restoration plan, subject to public review and comment.
  - Changes of less than \$50,000 to the amount of funding to be spent on a Restoration Type within a Restoration Area are not changes to the restoration plan and would not require public review, comment, or court approval before the change is put into effect; however, public notice of such a change is required.
  - Modifications to shift funding designated for one restoration goal to another restoration goal will be made only with the consensus of the Trustees in the TIGs affected and only with court approval, through a motion to the court with a description for the basis of the change.
- **Strategic restoration planning.** TIGs may prepare strategic frameworks to focus and sequence priorities within a Restoration Area or to provide additional vision of how to meet Restoration Type goals set forth in the PDARP. Strategic frameworks may provide context for prioritization, sequencing, and selection of specific projects within project-specific restoration plans. Strategic frameworks help the Trustees consider resources at the ecosystem level, while implementing

## 7.3

### Restoration Planning

restoration at the local level. These frameworks would support the adaptive management framework described below in Section 7.5, Monitoring and Adaptive Management (e.g., modification of restoration approaches [Appendix 5.D, Restoration Approaches and OPA Evaluation] or update best practices [Appendix 6.A] to provide more protection for listed species and designated critical habitat). Strategic frameworks may be particularly relevant for Gulf-wide resource-level planning led by the Regionwide TIG for living coastal and marine resources, sea turtles, marine mammals, birds, and oysters and may also be developed for other Restoration Types allocated to the Regionwide and Open Ocean TIGs. Strategic frameworks may be updated based on new knowledge obtained by Trustee efforts or the broader science community and updates to relevant species recovery or management plans prepared under other statutes. Where applicable, this planning would be coordinated with existing entities charged with managing protected and managed resources, such as ESA technical recovery teams and the appropriate NOAA or USFWS offices. Strategic restoration planning can also create streamlining efficiencies for regulatory compliance, such as ESA consultation.

### 7.3.2 Individual Trustee Agencies

Individual Trustee Agencies identify candidate restoration projects; develop project details, including costs and alternatives; describe implementation methodologies; evaluate expected resource benefits; and develop project-specific monitoring plans. These project-specific details will be provided to the TIG to support their restoration planning and project decision responsibilities.

Many of the Individual Trustee Agencies have conducted extensive regional restoration planning, and the OPA NRDA regulations allow for consideration of such plans in selecting projects, provided the OPA regulations are followed. The Individual Trustee Agencies can assist the TIG in drawing from these plans, provided they are relevant and consistent with implementing the goals of this PDARP/PEIS.

### 7.3.3 Trustee Council

The Trustee Council retains and performs certain restoration planning administrative functions that serve to promote consistency in processes under this PDARP/PEIS, allow for appropriate aggregation of information across TIGs, and support program-wide reporting to the public.

The Trustee Council will continue using existing project reporting tools, and/or update the tools to adapt to changing technology, that enable tracking restoration planning progress (see Section 7.7, Public Engagement and Restoration Tracking). The Trustee Council will coordinate with the TIGs to aggregate both restoration planning and specific project information for regular public reporting, as determined in Trustee Council SOP. The Trustee Council may re-examine the restoration program approximately every 5 years to track its status towards meeting the established restoration goals, including the Monitoring, Adaptive Management, and Administrative Oversight goal, and to determine any updates needed based on newly emerged science and/or restoration procedures and Trustees' experience managing and implementing this restoration program.

The Trustee Council and TIGs share responsibility to coordinate with other restoration programs, including other *Deepwater Horizon* restoration programs. Coordination among programs will promote

successful implementation of this PDARP/PEIS and optimize ecosystem recovery within the Gulf. The Trustee Council may consider the restoration actions of these other programs and facilitate the TIGs identifying synergies, leveraging opportunities, and evaluating cumulative effects, as well as reducing potential redundancy when selecting projects under this PDARP/PEIS. Furthermore, these programs will each produce significant monitoring data that are critical to informing restoration decisions and improving adaptive management. Data sharing among programs is encouraged, and the Trustee Council will make information for projects selected under this PDARP/PEIS available to the public, as well as to the scientific community and other restoration programs.

## 7.4 Restoration Implementation

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Restoration implementation will be consistent with final restoration plans and established SOP and will be in compliance with all applicable federal, state, and local laws. Project-specific restoration implementation responsibilities of the TIGs, the Individual Trustee Agencies, and the Trustee Council are described in this section. The Individual Trustee Agencies designated as Implementing Trustees are the primary restoration implementation entities, responsible for all implementation tasks such as contracting to complete implementation phases, conducting project-specific monitoring and adaptive management, and maintaining projects in the long term. TIGs track whether projects are implemented consistent with final restoration plans and applicable MOUs and SOP and coordinate with both the Implementing Trustees and the Trustee Council. The Trustee Council coordinates with each TIG to track and report the aggregated implementation status of the restoration program to the public and ensures that implementation is consistent with the commitments described in this and future restoration plans. Additional details on the distribution of restoration implementation responsibilities are provided in the subsections below.

### 7.4.1 Trustee Implementation Groups

TIGs will ensure that implementation of projects for each Restoration Type is in accordance with Trustee Council and TIG MOUs and SOP. TIGs will identify Implementing Trustees for each selected restoration project and follow Trustee Council SOP to ensure that consistent project tracking and reporting approaches are used by Implementing Trustees. When multiple Individual Trustee Agencies are cooperatively implementing projects, or when complex projects are selected, the TIGs may request that project management plans and/or project-specific MOUs be completed by the Implementing Trustee(s). Project management plans may include items such as Trustee coordination, detailed project budgets and schedules, implementation approaches, project phasing (if applicable), risk assessment, and contingency planning. As requested by the TIG, these plans may be reviewed by the TIG and agreed upon prior to the release of project funds. Project-specific MOUs may be used to identify which Individual Trustee Agency is responsible for each project phase, including long-term management and oversight.

Throughout project implementation, TIGs review project information and monitoring data provided by the Implementing Trustee(s) to consider whether the project is performing as planned. In the event that project modifications are identified during implementation, TIGs must coordinate with Implementing Trustees to determine if those changes warrant any revised restoration planning or environmental evaluation and identify if a project needs to be terminated. Further, TIGs will develop procedures to select another project in the event of project termination. TIGs may also review corrective actions proposed by the Implementing Trustee(s) to promote consistency in actions applied to restoration approaches. TIG coordination across projects may be funded with administrative oversight and comprehensive planning funds allocated to each respective TIG.

TIGs summarize progress toward completing the engineering and design, construction, monitoring and adaptive management, and long-term maintenance project phases and provide this information to the Trustee Council in accordance with the Trustee Council SOP.

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### Restoration Implementation

## 7.4.2 Individual Trustee Agencies

Project implementation is accomplished by Individual Trustee Agencies that are identified by each TIG as the Implementing Trustee or Trustees. Project-specific administration and oversight costs for project management will be included in project implementation budgets. Project implementation is generally completed and reported in the following phases, when applicable: engineering and design, construction, monitoring, and long-term maintenance, each of which is addressed below:

- **Engineering and design.** Engineering and design may be completed by the Implementing Trustee, when appropriate, or through the use of contractors. Where signed and sealed engineer or survey documentation is required, the Implementing Trustee(s) will ensure that the engineer or surveyor signing work products is licensed to practice in the state where the project is being implemented. Designs will not be finalized until the Implementing Trustee determines that the design is in compliance with all regulatory requirements (e.g., federal, state, and local permitting requirements) and consultations (e.g., ESA-listed and other protected species). On request, the Implementing Trustee(s) will furnish engineering and design materials to the TIG. When the engineering and design phase is complete, the Implementing Trustee(s) notifies the TIG that the project is moving into the construction phase.
- **Construction.** During construction, Implementing Trustees monitor construction activities as required by regulatory permits and consultations to avoid environmental impacts to habitats and species. When the construction phase is complete, the Implementing Trustee(s) notifies the TIG that the project is moving into the monitoring phase, reports on the outcomes of construction, and provides as-built materials, as requested by the TIG.
- **Monitoring.** Project-specific monitoring and associated adaptive management/corrective actions will be conducted by the Implementing Trustee(s) before, during, and/or after construction and/or implementation. Monitoring will use project funds and be conducted in accordance with final project monitoring plans. Project monitoring will be conducted in accordance with the monitoring and adaptive management SOP developed by the Trustee Council. Monitoring data will be used by the Implementing Trustee(s) to track whether projects are trending towards the project's established performance criteria or whether adaptive management, maintenance, or corrective actions are needed. If these corrective actions require additional or modified environmental reviews, the Implementing Trustee(s) will notify the TIG and a determination will be made on whether any public notification is required by law.
- **Long-term maintenance.** The Implementing Trustee(s) will ensure that appropriate long-term maintenance activities likely to be required for each project are identified, and that appropriate budgets and agreements are established to maintain each project over its intended lifespan. Upon discretion of the Implementing Trustee(s), third parties may be identified as long-term stewards of completed projects, and project funds may be allocated for their involvement.
- **Project modifications.** If a project modification is necessary during the engineering and design or construction phases of the project, the Implementing Trustee(s) will inform the TIG, document whether the project modification materially affects the project's selection, and

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### Restoration Implementation

determine, in coordination with the TIG, whether any updates to regulatory permits and/or consultations may be required. If changes to environmental compliance require additional public input, the TIG will give the public a reasonable opportunity to review and comment on the proposed project change prior to final approval of the modification by the TIG.

- **Project termination.** If a project must be terminated during the engineering and design or construction phases, the remaining funds that would have been spent on that project will remain dedicated to the same Restoration Type and returned to the NRDAR TIG subaccount (see Section 7.6, Financial Management), unless otherwise specified by the TIG. Use of remaining funds for another project will require additional restoration planning.
- **Project completion/closeout.** A project is complete after all activities and expenditures have been accomplished for that project per the final restoration plan, including monitoring, long-term maintenance, and final reports. The Implementing Trustee(s) will notify the TIG when a project is complete and identify whether any project funds remain (excess funds<sup>6</sup>). Excess funds will be returned to the TIG's NRDAR subaccount, unless otherwise specified by the TIG, and will remain dedicated to the same Restoration Type as that associated with the completed project. A TIG must agree by consensus to apply excess funds to another project(s) in accordance with the project selection criteria described above (Section 7.3, Restoration Planning).

### 7.4.3 Trustee Council

The Trustee Council tracks and reports to the public on the aggregate status of restoration program implementation and ensures that implementation is consistent with the commitments described in this and future restoration plans. Project tracking and reporting will follow the requirements established within the Trustee Council SOP, and are further discussed in Section 7.7, Public Engagement and Restoration Tracking.

### 7.4.4 Relationship to Early Restoration Framework Agreement

Chapter 5 (Appendix 5.B) describes the status of Early Restoration projects selected for implementation under the Early Restoration Framework Agreement. As of the Final PDARP/PEIS release date, the Trustees have finalized five Early Restoration Plans, providing funding for the implementation of a total of 65 Early Restoration projects. Funding for implementation of all Early Restoration projects has or is being made available to the Trustees identified in those plans or agreements as responsible for their implementation (the Implementing Trustees), consistent with prior agreements among BP and the Trustees. Remaining Early Restoration funds will be allocated to appropriate TIGs as reflected in Chapter 5, Section 5.10, Summary of Preferred Alternative and Funding Allocations, Table 5.10-1.

Agreed-upon Early Restoration projects will continue in accordance with the Trustees' prior decisions and any agreements entered into by or among the Implementing Trustee(s). These restoration projects will become part of the general portfolio of Trustee-approved restoration projects under the PDARP/PEIS for purposes of financial management, restoration progress reporting, and tracking and will

<sup>6</sup> Early Restoration excess funds are discussed below.

be subject to SOP and other existing procedures for evaluating and identifying material project changes, as approved by the Trustee Council. Upon settlement, the Early Restoration project stipulations with BP will be void as to undertakings between BP and the Trustees. This is provided, however, that the Trustees use the amounts paid or committed by BP under each project stipulation for the project(s) and in the manner specified in the stipulation and the corresponding Early Restoration plan adopted by the Trustees. Decisions, however, concerning any project modification(s), the selection and implementation of any replacement project(s), and the use of any unexpended Early Restoration project funds will be made by the appropriate TIG for that project.

**7.4**

Restoration Implementation

## 7.5 Monitoring and Adaptive Management

The Trustees identify specific funding for the monitoring and adaptive management component of the restoration goals, as described in Chapter 5, Restoring Natural Resources. Monitoring and adaptive management supports all restoration activities under this PDARP/PEIS by tracking and evaluating restoration progress toward goals, determining the need for corrective actions, addressing key uncertainties, and ensuring compliance with appropriate regulations (see Appendix 5.E, Monitoring and Adaptive Management Framework, for details). Through monitoring and adaptive management, decisions are continuously informed by evolving restoration data and information. The adaptive management process incorporates monitoring of restoration progress, consideration of uncertainties, and opportunities for the Trustees to adapt restoration activities to ensure restoration success (Pastorok et al. 1997; Thom et al. 2005; Williams 2011; Williams et al. 2007).

The Trustees recognize that the best available science to use for planning restoration activities evolves as the body of science originating from this program, as well as other science, monitoring, and restoration programs in the Gulf of Mexico, continues to grow. As a result, the adaptive management process for this restoration plan incorporates monitoring and other targeted scientific support (e.g., modeling and analysis of existing data, and engagement of internal and external scientific experts) to address uncertainties and inform corrective actions. Details on the distribution of monitoring and adaptive management responsibilities are provided in the subsections below.

### 7.5.1 Trustee Implementation Groups

The TIGs provide several project- and resource-level monitoring and adaptive management functions, including monitoring data aggregation and tracking progress toward restoration objectives and goals.

#### 7.5.1.1 Project-Specific Monitoring and Adaptive Management

TIGs coordinate with Implementing Trustees to support consistency and compatibility of monitoring plans and data management, in accordance with the Trustee Council SOP (and respective TIG SOP, if applicable) and aggregate Implementing Trustee's monitoring data by Restoration Type for reporting to the Trustee Council. According to the OPA NRDA regulations (15 CFR § 990.55), a project-specific monitoring plan includes "a description of monitoring for documenting restoration effectiveness, including performance criteria that will be used to determine the success of restoration or need for interim corrective action." The Trustees are committed to this required level of project monitoring and may choose to conduct additional monitoring. TIG responsibilities will include the following:

- **Review and provide feedback for monitoring and adaptive management plans and efforts.** TIGs review project monitoring and adaptive management plans for content, for compliance with regulatory requirements, and to determine their readiness for inclusion in restoration plans.
- **Coordinate data management and reporting.** TIGs track project monitoring data to ensure that data, monitoring reports, and other monitoring information are consistent and compatible with the SOP and are linked to a central repository (see Section 7.7, Public Engagement and Restoration Tracking). They then report this monitoring information to the Trustee Council.

- **Assist in identifying and developing corrective actions.** TIGs will coordinate and support the identification and development of corrective actions, particularly for projects with similar restoration objectives.

### 7.5.1.2 Resource-Level Monitoring and Adaptive Management

TIGs will coordinate with each other and with individual federal and state Trustees to identify resource-level monitoring priorities. This coordination will support consistency among restoration efforts, as well as with the Trustee Council SOP and TIG SOP. It will also promote efficiency of resource-level and/or cross-resource-level monitoring and adaptive management activities, as appropriate. Resource-level (i.e., for a Restoration Type; see monitoring sections of Chapter 5, Sections 5.5.2 through 5.5.14, and as defined in Appendix 5.E, Monitoring and Adaptive Management Framework) and/or cross-resource-level (i.e., applicable to multiple Restoration Types) monitoring and adaptive management include tracking and enabling aggregation and evaluation of restoration progress, addressing key uncertainties about a resource and its responsiveness to restoration actions, and performing strategic planning for restoration of injured resources. Resource- and cross-resource-level adaptive management will be supported by targeted monitoring and scientific support, as appropriate. TIG responsibilities include the following:

- **Evaluate and aggregate progress of multiple projects.** TIGs evaluate and aggregate monitoring data from projects with similar objectives, as appropriate, to document progress toward meeting Restoration Type and Programmatic Goals (see Chapter 5, Restoring Natural Resources, for more details).
- **Identify needs and set priorities for targeted resource-level monitoring and scientific support.** TIGs identify the need and priorities to most efficiently conduct resource-level and/or cross-resource-level monitoring and scientific support. TIGs define the objectives and scope for resource-level and/or cross-resource-level monitoring and scientific support, identify the Implementing Trustee(s), authorize funding, and include monitoring and scientific support activities in restoration plans.
- **Consider strategic planning to guide restoration of injured resources.** Particularly within the Regionwide TIG, but not exclusively, TIGs may develop strategic plans to guide monitoring and adaptive management for an injured resource. TIGs may share monitoring data aggregation and analysis responsibilities with each other, especially when Restoration Types overlap geographic areas, to help assess the combined effects of restoration projects and to improve the efficiency and overall effectiveness of restoration evaluation.

### 7.5.2 Individual Trustee Agencies

Individual Trustee Agencies write monitoring and adaptive management plans and conduct monitoring activities, including project-specific maintenance, adaptive management, and corrective actions, consistent with the Trustee Council SOP and TIG SOP. When designated as Implementing Trustees, Individual Trustee Agencies' project-level responsibilities include the following:

- **Write monitoring and adaptive management plans.** Implementing Trustees develop monitoring plans for inclusion in restoration plans for all selected projects. Monitoring and adaptive

management plans include measurable objectives with associated performance standards to track progress toward restoration goals, methodologies and parameters for data collection, identification of key uncertainties, tracking of compliance with appropriate regulations, and a description of how the data collected will be used to determine the potential need for corrective actions.

- **Conduct (or contract) project-level monitoring and evaluation.** Implementing Trustees conduct project-specific monitoring (including data collection, data analysis, and synthesis), compare progress against project-specific performance standards, evaluate each project's performance toward restoration objectives, and identify the need for and propose corrective actions to the TIGs. Individual Trustee Agencies enter or upload project-specific monitoring information, including objectives, performance standards, and collected data into the central repository (described below in Section 7.7, Public Engagement and Restoration Tracking).

Resource-level monitoring and adaptive management responsibilities of Individual Trustee Agencies at the direction of the TIGs may include the following:

- **Identify and recommend resource-level monitoring needs.** Individual Trustee Agencies may identify and propose resource-level and/or cross-resource-level monitoring activities to the TIGs.
- **Conduct resource-level monitoring and scientific support.** Individual Trustee Agencies, when designated by the TIGs, conduct resource-level and/or cross-resource-level monitoring and scientific support activities (as defined in Appendix 5.E, Monitoring and Adaptive Management Framework) and link data, analyses, reports, and other scientific products to the central repository.

### 7.5.3 Trustee Council

The Trustee Council promotes consistency in monitoring and adaptive management activities across TIGs and Restoration Types through development of SOP. It also aggregates monitoring information across TIGs to track restoration progress of each Restoration Area. The Trustee Council will designate support staff to participate on a cross-TIG Monitoring and Adaptive Management working group to support the Trustee Council's monitoring and adaptive management responsibilities. This working group may also be supported by a designated science coordinator. Trustee Council monitoring and adaptive management responsibilities include activities such as:

- **Develop and maintain a monitoring and adaptive management SOP.** Monitoring and adaptive management SOP will be components of the Trustee Council SOP and will ensure monitoring data can be accessed and evaluated to track resource-level restoration progress. Consistent monitoring plans and data management procedures facilitate consistency in data collection and reporting, data aggregation for Restoration Types, reporting to the public, coordination with other restoration partners, and use of data by the scientific community.

- **Summarize and communicate monitoring information.** The Trustee Council aggregates both monitoring information and results of analyses provided by each TIG, and communicates their collective progress towards meeting the programmatic and Restoration Type goals (see Chapter 5, Restoring Natural Resources) to the public.
- **Provide data management infrastructure.** The Trustee Council, working with the TIGs and Individual Trustee Agencies, supports the provision and/or development and maintenance of data infrastructure (e.g., the DIVER Restoration Management Portal; see Section 7.7, Public Engagement and Restoration Tracking) for monitoring and adaptive management. This portal includes a central repository for aggregation of monitoring information.
- **Coordinate with other science and monitoring programs in the Gulf of Mexico.** The Trustee Council coordinates with the RESTORE Council and other appropriate restoration programs and/or partners to identify synergies across programs and ensure efficiencies among the programs are leveraged, where applicable. The Trustee Council may coordinate with other restoration and science programs when developing the monitoring and adaptive management SOP.
- **Detect emerging unknown conditions.** The Trustee Council identifies, with input from the TIGs, irregularities in restoration data and/or information from other restoration and science programs that may signal the existence of emerging unknown conditions that may need to be considered in future restoration decision-making. Decisions on utilizing funds under the Unknown Conditions TIG will be informed by monitoring data gathered across TIGs and by review of any available scientific and supporting information that documents unforeseen conditions. The Trustees will develop specific procedures in the future to guide Trustees' decisions on use of the Unknown Conditions allocation, and these will then be made part of the Trustee Council SOP. Unknown Conditions funds would not be accessed until such time as those procedures are developed.
- **Perform program review.** Trustee Council support staff may direct peer review, by restoration and/or academic professionals, of any monitoring, analysis, and/or other products developed by the Trustees and guide the subsequent flow of this information to and from the TIGs and Individual Trustee Agencies.

## 7.6 Financial Management

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The Trustee Council, TIGs, and Individual Trustee Agencies have responsibility for overseeing and accounting for the use of natural resource damage (NRD) monies for restoration activities consistent with the PDARP/PEIS, Trustee Council SOP, and other governing documents.

### 7.6.1 Trustee Implementation Groups

TIGs review Individual Trustee Agency accounting policies and procedures for holding and tracking disbursed funds, review actual expenditures disbursed for restoration activities, and report to the Trustee Council on the use of funds throughout the TIG.

In selecting and implementing projects and using administrative and oversight funds, each TIG will conform, at a minimum, to the SOP set by the Trustee Council, and each TIG will establish a system for managing all funds deposited in its specific DOI NRDAR Fund subaccount. A general framework to develop an administrative accounting process will include the following:

- **Distribution of funds.** NRD monies will be deposited into the DOI NRDAR Fund. Subaccounts for each TIG will be established to fund the work in that Restoration Area, and further subaccounts may be established by each TIG, as appropriate, and in coordination with DOI. Disbursements from these subaccounts will be made by DOI on receipt of a written request, in the form of a formal resolution, from the TIG. The process for requesting funding from the DOI NRDAR Fund will be contained in the Trustee Council SOP.
- **Use of funds.** Funds will be used for restoration activities that are consistent with the PDARP/PEIS, Trustee Council SOP, and TIG SOP, when applicable. Funds can be used for direct project implementation costs and indirect costs to support TIG activities related to project planning and implementation, including monitoring/adaptive management and administrative oversight.
- **Administrative accounting process.** At a minimum, annual financial reports will be generated by each TIG. The reports will track all funds disbursed to and expended by the TIGs, according to Restoration Types, and will include all project and administrative disbursements, interest earned, expenditures, and account balances. The reports will be submitted to the Trustee Council and made publicly available. The annual reporting period will be set according to the Trustee Council fiscal year (January to December). These annual reports will be compiled by each TIG and be self-certified (formal audits are discussed below).
- **Regular audits.** Financial audits will be conducted on a regular basis (e.g., at least every 2 to 3 years) to ensure public trust and accountability regarding the use of *Deepwater Horizon* NRDA funds. The Trustee Council SOP will specify the minimum internal controls and documentation measures required. Financial audits will be conducted by an independent financial auditor following the most recent Generally Accepted Government Auditing Standards available during the fiscal year in which the audit is conducted. All final financial audit reports will be provided to the Trustee Council.

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- **Use of interest earned on restoration funds.** Interest earned on TIG NRDAR subaccounts may be used at the discretion of the TIGs for restoration within the jurisdiction of each TIG, including for TIG planning, operation, and administration, or for any other responsibilities described in Trustee Council and/or TIG SOP. Any use of such funds for projects requires restoration planning.

### 7.6.2 Individual Trustee Agencies

Individual Trustee Agencies, acting as Implementing Trustees, are responsible for tracking project-level receipts and expenditures throughout project implementation, including long-term maintenance, until project completion/closeout. Individual Trustee Agencies execute contracts to complete projects, enter into cooperative agreements (or other appropriate partnership arrangements) with local governments and other third parties, and ensure that project funds are expended by contractors and partners on appropriate project-related expenses. All contracting and/or partnering procedures obligating TIG funds will be executed in accordance with applicable federal and/or state acquisition regulations where project implementation occurs,<sup>6</sup> including internationally, when applicable.

### 7.6.3 Trustee Council

The Trustee Council will establish financial SOP as a component of the Trustee Council SOP, as well as other processes to guide financial documentation, tracking, and reporting of the Trustee Council, each TIG, and each Individual Trustee Agency. In doing so, the Trustee Council will promote public transparency in the expenditure of funds and consistency in financial reporting. All funds received and expended, including interest on received funds, will be subject to the financial SOP. The Trustee Council will coordinate with the TIGs to aggregate the financial status of the restoration program and report that status to the public on a regular basis.

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<sup>6</sup> Acquisition regulations of the Implementing Trustee(s) will be followed (e.g., a project implemented by a Louisiana Trustee would follow Louisiana acquisition regulations).

## 7.7 Public Engagement and Restoration Tracking

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As stewards of public trust resources under OPA, the Trustees engage and inform the public and maintain an open and documented process for implementing restoration under this PDARP/PEIS. To effectively act on behalf of the public, the Trustees maintain transparency by establishing public engagement and reporting policies.

### 7.7.1 Public Engagement

Opportunities for public engagement will be provided throughout the implementation of this restoration program. Public meetings will be held to provide information to, and to receive comment from, the public on restoration activities. The Trustees will publicly notice certain program milestones as part of effective restoration planning and implementation, exchange restoration ideas or concerns, cultivate a broad understanding of restoration, and increase the public's awareness of the process.

The Trustee Council will hold at least one public meeting per year, unless a TIG planning cycle calls for a different frequency, in which each TIG will provide an update on the status of its restoration planning, implementation, and monitoring/adaptive management, and where there will be opportunity for public input. In addition, as described in Section 7.3 each TIG<sup>7</sup> will hold at least one public meeting per year to discuss the status of its restoration planning, upcoming restoration planning (including the Restoration Type[s] that TIG will focus on for a specified timeframe), and where there will be an opportunity for public input. TIGs may also coordinate with specific communities when developing specific restoration projects.

In addition to public meetings, the Trustee Council will maintain and update its current public website<sup>8</sup> containing information on restoration activities. The website will be updated to provide public access to restoration information and updates from the Trustee Council, TIGs, and Individual Trustee Agencies in one central location. Information also may be available on individual Trustee's websites. Information posted on the Trustee Council's website will include, but will not be limited to, the following:

- Draft and final restoration plans.
- Project and resource monitoring information.
- Informational fact sheets.
- Project details, status reports, and other activity tracking information.
- Restoration progress updates and reports.
- A library of supporting documents.
- Notices and information regarding upcoming outreach/public participation activities.
- Trustee contact information.
- Links to TIG and individual Trustee websites.
- Link(s) to the Administrative Records(s).

<sup>7</sup> The Unknown Conditions and Adaptive Management TIG would not hold annual meetings until its work begins in future years.

<sup>8</sup> <http://www.gulfspillrestoration.noaa.gov/>

Notices for public meetings, opportunities for public review of restoration plans, and other public participation events are provided in the *Federal Register*, when required, and by the Trustee Council's website.

### 7.7.2 Administrative Record

As provided in 15 CFR § 990.45 and § 990.61, the Trustees will maintain the Administrative Record(s) for restoration planning and restoration implementation. Each TIG will develop and maintain Administrative Record material for its Restoration Area. The Trustee Council will establish consistent Administrative Record procedures and aggregate the Administrative Record materials collected and maintained by the TIGs in a central location (e.g., via a web portal). The Administrative Record for restoration planning generally includes 1) draft and final restoration plans, notices, public comments, and signed NEPA and environmental compliance documentation; 2) relevant information used to form the basis for Trustee decisions related to restoration; and 3) agreements, not otherwise privileged, among the participating Trustees, Trustee Council, and TIGs, including resolutions and implementation decision documents. The Administrative Record for restoration implementation generally includes all restoration implementation decisions, actions, and expenditures, including any modifications made to the final restoration plan. The Administrative Record for this PDARP/PEIS can be found at <http://www.doi.gov/deepwaterhorizon/adminrecord/index.cfm>.

### 7.7.3 Restoration Tracking and Reporting

The Trustee Council will share with the public regular reports of project progress, performance, and financial accounting of their actions. The basic reporting requirements for each TIG will be further defined within the Trustee Council SOP, including procedures for reporting project status, financial information, environmental compliance, and project monitoring activities. Additional metrics and SOP applicable to reporting requirements may be developed by the TIGs.

Given the complexity and volume of projects likely to be implemented under this PDARP/PEIS, the Trustee Council will use and adapt its existing central reporting platform, the DIVER Restoration Management Portal, to facilitate consistent and efficient aggregation of information and project reporting across the TIGs. This existing portal enables a cost-effective approach for the Trustee Council to provide aggregate restoration reporting to the public, because it supports consistent information collection and is designed to connect to a public web interface that publishes submitted data. This functionality reduces the administrative and financial burden of manually generating reports and converting them into publicly accessible and easily transferable information. The Restoration Management Portal is part of the broader DIVER platform, which is a data warehouse and query application that integrates datasets across data holdings. The DIVER platform also provides for ease in sharing project, financial, and scientific information with the other *Deepwater Horizon* restoration programs and other restoration partners. The DIVER Restoration Management Portal offers data management options for each Trustee; additionally, the Trustees may maintain records on other platforms.

The DIVER Restoration Management Portal facilitates consistent project progress reporting, as well as financial information, which is necessary for the Trustee Council to compile aggregate reports. These

aggregate reports are essential both for reflecting the collective project outcomes of the full body of restoration work conducted by the Trustees to the public and for informing adaptive management of this program. Further, aggregate financial reports track the collective disbursements and expenditures of the TIGs and provide financial information material for conducting the independent financial audits discussed in Section 7.6, Financial Management. The DIVER Restoration Management Portal includes the following:

- Project idea submissions.
- Administrative and financial disbursements and expenditures.
- Restoration project tracking information.
- Document and data storage.
- Environmental compliance tracking information.
- Adaptive management and monitoring data.
- Restoration project reports to the public.

## 7.8 References

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## **8. Trustee Responses to Public Comments on the Draft PDARP/PEIS**

### What Is in This Chapter?

- **Introduction (Section 8.1):** When was the public comment period, and where were public meetings held? By what means were public comments received, and how were public comments reviewed?
- **Organization of This Chapter (Section 8.2):** How are comments and responses organized within this chapter?
- **Public Comments and Trustee Response (Section 8.3):** What comments did the Trustees receive on the Draft PDARP/PEIS and what are the Trustees' responses?

## 8.1 Introduction

The public comment period for the Draft PDARP/PEIS opened on October 5, 2015, for 60 days, and closed on December 4, 2015. During that time, the Trustees hosted eight public meetings in Louisiana, Mississippi, Alabama, Florida, Texas, and Washington, D.C.:

- October 19, 2015: Houma, Louisiana
- October 20, 2015: Long Beach, Mississippi
- October 22, 2015: New Orleans, Louisiana
- October 26, 2015: Mobile, Alabama
- October 27, 2015: Pensacola, Florida
- October 29, 2015: Saint Petersburg, Florida
- November 10, 2015: Galveston, Texas
- November 18, 2015: Washington, District of Columbia

At the public meetings, the Trustees accepted written comments, as well as verbal comments that were recorded by court reporters. In addition, the Trustees hosted a Web-based comment submission site (which included an email address) and provided a post office box as other means for the public to provide comments. As a result, the Trustees received comments provided at public meetings and submissions by the website, email, and regular mail.

During the public comment period, the Trustees received approximately 6,370 submissions from private citizens; businesses; federal, state, and local agencies; nongovernmental organizations; and others. The Trustees reviewed all submissions. Similar or related comments contained in the submissions were then grouped and summarized for purposes of response. All comments submitted during the period for public comment were considered by the Trustees prior to finalizing the PDARP/PEIS. All comments submitted are represented in the summary comment descriptions listed in this chapter, and all public comments will be included in the Administrative Record.

The Trustees used the Department of the Interior’s Planning, Environment and Public Comment (PEPC) database for comment collection as well as for managing the comments. The database stores the full text of all submissions and allows each comment to be grouped by topic and issue. Comments were sorted into categories that were consistent with the chapters in the PDARP/PEIS, and were further divided into smaller groups (e.g., restoration of marine mammals, injury to birds, etc.). All comments were read and analyzed, including those of a technical nature; opinions, feelings, and preferences for one potential alternative over another; and comments of a personal or philosophical nature.

The Trustees drafted summary comment statements to consolidate groups of similar comments into one statement or to summarize a particularly long comment. For some comment statements, the verbatim language from the commenter(s) was used as the comment statement. These summary comment statements are labeled “comment” in this chapter. Since comment statements are based on actual commenters’ text, the feelings expressed by the commenters are not necessarily those of the Trustees. The Trustees ensured consideration of the original text from each public submission when preparing the response. If the Trustees’ consideration of the comments resulted in a change to the PDARP/PEIS, the location of the change is provided in the response. Note that section numbers cited in the comment statement refer to section numbers the commenter cited to, and are references to the Draft PDARP/PEIS. Chapter 1 provides a summary of the major comment themes and resulting changes made in finalizing the PDARP/PEIS.

## 8.2 Organization of This Chapter

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Comments received were both general in nature as well as directed toward specific aspects of one or more of Chapters 1 through 7 of the Draft PDARP/PEIS. Accordingly, the Trustees organized the comments and responses in the following manner:

- Chapter 1: Introduction and Executive Summary (including general comments)
  - General/Overall Comments
  - Public Comment Process
  - Comments on the Proposed Settlement
  - Other Comments Not on the PDARP/PEIS
- Chapter 2: Incident Overview
  - General/Overall Comments on the Incident
- Chapter 3: Ecosystem Setting
  - General/Overall Comments on the Ecosystem Setting
- Chapter 4: Injury to Natural Resources
  - General/Overall Comments on the Injury to Natural Resources
  - Natural Resource Exposure: Dispersants
  - Benthic Resources Assessment
  - Gulf Sturgeon Assessment
  - Nearshore Marine Ecosystem Assessment
  - Bird Assessment
  - Sea Turtle Assessment
  - Marine Mammal Assessment
  - Lost Recreational Use Assessment
- Chapter 5: Restoring Natural Resources
  - General/Overall Comments on Restoration of Natural Resources
  - Habitat Restoration

## 8.2

- Water Quality Restoration
- Fish Restoration
- Sea Turtle Restoration
- Marine Mammal Restoration
- Bird Restoration
- Mesophotic and Deep Benthic Restoration
- Recreational Use Restoration
- Monitoring and Adaptive Management
- Chapter 6: Environmental Consequences and Compliance with Other Laws
  - General/Overall Comments on General/Overall Comments on Environmental Consequences and Compliance with Other Laws
- Chapter 7: Governance
  - General/Overall Governance Structure
  - Financial Management
  - Monitoring and Adaptive Management

## 8.2

Organization of This Chapter

## 8.3 Public Comments and Trustee Response

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### 8.3.1 Chapter 1: Introduction and Executive Summary

#### 8.3.1.1 General/Overall Comments

**1-1 Comment:** Many commenters noted that the Trustees have spent an enormous amount of time and effort on the processes of injury assessment and restoration planning, and that the PDARP/PEIS provides a strong vision and rationale for undertaking an ecosystem approach to restoration of the northern Gulf ecosystem and includes a commitment to monitoring and adaptive management. Many commenters expressed support for the plan and the comprehensive analysis it entails.

**Response:** The Trustees acknowledge and appreciate the support.

**1-2 Comment:** The release of the PDARP/PEIS and the Consent Decree represent a critical milestone on the road to restoration; please ensure funding flows for restoration project implementation.

**Response:** Once the PDARP/PEIS is finalized and the Consent Decree is approved by the court, the Trustees will move forward with implementation of the Final PDARP/PEIS via the development of individual restoration projects in subsequent restoration plans.

**1-3 Comment:** One commenter noted that “the decision by the Natural Resource trustees in assessment of the injuries on behalf of the public and public interest and the public good lack transparency and clear accountability for communicable public input and engagement. Therefore, we strongly oppose approval, adoption of the PDARP, PEIS presented during the public meetings held October the 19th through November the 18th, and recommend that the trustees revisit and reengage the impacted communities.”

**Response:** As noted in response to other comments regarding the public comment period, the Trustees believe that the thousands of comments received reflect a successful public outreach and comment process. The PDARP/PEIS reflects the assessment of the injury. The Trustees have made extensive efforts to make this document accessible and transparent to the public, including producing fact sheets and an overview document, and holding public meetings summarizing the document in each of the Gulf states. The Trustees do not agree that further public engagement on the PDARP/PEIS is necessary before the documents are finalized, and the important work of project selection can begin. As noted in the PDARP/PEIS, the public and impacted communities will continue to be engaged as the Trustee Implementation Groups begin the important task of selecting projects consistent with this PDARP/PEIS.

#### 8.3.1.2 Public Comment Process

**1-4 Comment:** Commenters expressed concern that the public meetings on the Draft PDARP/PEIS were not held in a format supportive of community engagement, and as a result those most impacted were not present at the public meetings.

**Response:** The Trustees held a series of eight public meetings across the Gulf states and in Washington, D.C., in order to inform the public of the content within the Draft PDARP/PEIS and take public comment in oral format. Each meeting was noticed both in the *Federal Register* and through local news publications. In addition, public meetings were only one format for the public to provide input on the Draft PDARP/PEIS. Written comments were accepted and were considered in the same way as oral comments, and all were considered in the development of the Final PDARP/PEIS. Meetings were held in each of the Gulf states, with two meetings held in both Florida and Louisiana. Every attempt was made to pick locations accessible to affected communities. Venues had to be available and could not have contract requirements the Trustees could not meet. Some commenters indicated that locations were not as accessible to specific communities as some would have liked. Unfortunately, this spill's impact was large across the entire Gulf. Holding meetings in every local community impacted by the spill was simply not feasible and locations were selected in an effort to allow as much access as possible, to as many of those affected as possible.

- 1-5 Comment:** Commenters noted that the document does a good job in covering the breadth of content, with some noting and appreciative that this was accomplished in fewer pages than the commenters expected. Commenters also noted the utility of the Overview document to assist the public in assimilating the extensive information.

**Response:** The Trustees acknowledge this support.

- 1-6 Comment:** Concerns were raised with respect to the timing and location of the public meetings and the overlap with shrimp fishing season. Some commenters indicated that, as a result of this overlap, many fishermen were not able to participate in the public meetings, and requested extension of the Draft PDARP/PEIS comment period from December 2015 to January or February 2016, and the proposed Consent Decree comment period from December into February or March 2016. Suggestions were made that greater participation would have resulted from meetings held in community centers and locations in closer proximity to fishing communities, rather than in large hotels and municipal locations.

**Response:** The Trustees understand that providing opportunity for public review and comment is an important part of restoration planning under the Oil Pollution Act (OPA) and the National Environmental Policy Act (NEPA). Trustees understand the importance of the Draft PDARP/PEIS and the matters it addresses to not just the Gulf states, but the public as a whole. In setting the length of the comment period, these concerns had to be weighed against the effect that delay has on the matters addressed in the PDARP/PEIS and matters addressed in the proposed Consent Decree. Keeping these concerns in mind, the comment period was set to 60 days, well beyond the minimum required for the Consent Decree (30 days) and beyond the 45 days required for a restoration plan integrated with an environmental impact statement (45 days).

The eight locations for the public meetings were selected with the aim of facilitating public participation and recognizing the importance of the PDARP/PEIS and Consent Decree to the local communities in the Gulf. In addition to taking comment at public meetings, the Trustees provided opportunity for public comment via an online comment portal, via email, and via U.S.

mail. The means for providing comment were noticed in the *Federal Register*, local news publications, at the public meetings, and on Trustee websites.

In addition to holding public meetings, the Trustees made the Draft PDARP/PEIS available to the public by way of Internet sites, direct mailing upon request, and delivery to local repositories in 67 locations across the Gulf states (see Section 6.18, “List of Repositories” in the PDARP/PEIS for the complete list). In addition to an Introduction and Executive Summary in the Draft PDARP/PEIS itself, an overview document was prepared to guide reviewers to the Draft PDARP/PEIS. Fact sheets, the overview document, and the Introduction and Executive Summary materials were translated into Vietnamese to assist non-English proficient reviewers, and those were distributed at meetings and posted on the Trustee’s website.

In reviewing requests for comment period extension, the Trustees also had to consider that delays in finalization of the PDARP/PEIS, particularly delays on the order of several months as requested by some commenters, would delay not only the Final PDARP/PEIS, but also, as a result, the Consent Decree and other matters before the Court. The Trustees (and the Department of Justice [DOJ] for comment on the related proposed Consent Decree) sought to make the commenting process as easy as possible. Comments could be made at public meetings in writing or orally, and a computer and support staff were made available at public meetings to assist attendees with submission of comments. Both the Trustees and DOJ provided Web portals for comments to be submitted online, and accepted comments by mail as well. Both the Trustees and DOJ also provided links to each other’s websites for information and comment.

**1-7 Comment:** Some commenters felt that public meeting notices should have been posted further in advance of the meeting date.

**Response:** The Trustees provided notice of the public meeting times and locations as early as practicable once all venues were contracted. Information about public meetings was posted on the Web and provided to the media, as well as published in news publications and via other Trustee notice procedures.

**1-8 Comment:** Commenters felt that the processes for and structure of public participation in public meetings were not adequate, particularly for underserved communities.

**Response:** The Trustees value review and comment by all members of the public and made the Draft PDARP/PEIS available for review in multiple formats to support review and comment by those unable to attend one of the public meetings. Based on experience from the Trustees’ public meetings during the four phases of DWH Early Restoration, the Trustees made translators available at the meetings most typically attended by members of the public who do not use English as their primary language. The Trustees translated a portion of the Draft PDARP/PEIS into Vietnamese and made materials available at public meetings as well as on the Internet. Sign language translators were present at each public meeting, and the Draft PDARP/PEIS and related materials for public review that were posted on websites were made available in accordance with Section 508 of the Rehabilitation Act of 1973, as amended.

- 1-9 Comment:** Commenters expressed support for the Draft PDARP/PEIS public comment process and recognized the effort that was put into developing the Draft PDARP/PEIS and convening the series of public meetings across the Gulf of Mexico and Washington, D.C.

**Response:** The Trustees acknowledge this support of the public comment process. As described in prior responses, the Trustees sought to make the public aware of the availability of the Draft PDARP/PEIS for public review and comment, made the document available via various means (on websites, in person at public meetings, in repositories, via mail upon request), and held public meetings in each of the Gulf states as well as in Washington, D.C.

- 1-10 Comment:** Commenters expressed concern with the perceived limited approach to announcing the public meetings via the *Federal Register*.

**Response:** The Trustees announced the public meeting times and locations via Trustee websites, in local newspapers, in the *Federal Register*, in state registers where appropriate, and via media notice and emails. Publication in the *Federal Register* alerts not only the local communities but also anyone across the United States who may have interest in the topic.

- 1-11 Comment:** One commenter expressed that the lack of Vietnamese translation at the Galveston, Texas, public meeting was not in compliance with Title VI.

**Response:** Vietnamese translators were provided at public meetings where the need was anticipated based on both prior experience holding meetings in those communities and outreach to state agencies. Providing translation without regard to whether anyone can reasonably anticipate the need for that service is not feasible due to cost and logistics. The Trustees attempted to provide reasonable accommodation where the Trustees had reason to anticipate the value of such accommodation. Translators were provided at the meetings held in Louisiana and Mississippi. Fact sheets on both the PDARP/PEIS and the Consent Decree were provided in Vietnamese, as was an overview of the Draft PDARP/PEIS. Some who attended the meeting in Galveston, Texas, needed Vietnamese translation. The Trustees allowed a volunteer (from a local Vietnamese fishers organization) to translate for attendees. This step alone constitutes a reasonable accommodation. Nonetheless, a week later that organization described the lack of Trustee-provided translation as discrimination under Title VI. The Trustees strongly disagree. Having received that comment, however, on November 30, 2015, the Trustees also had the presentations from Galveston meeting translated into Vietnamese and provided them to attendees (at least those who provided contact information, including the fishers organization), and also posted the translation on the Trustees' website.

- 1-12 Comment:** Commenters requested that the Trustees give clear definition to "relevant comment" so that stakeholders provide comments that will be considered in the completion of the Final PDARP/PEIS.

**Response:** All comments received during the public review period have been considered in the completion of the Final PDARP/PEIS. All comments relevant to the proposed action are fully considered. A very small number of comments were unrelated to the scope of the proposed action and were not addressed in this chapter. A number of comments were not directly on the

proposed action, such as comments on personal injury from the DWH oil spill or comments on the Consent Decree. These comments are described in this chapter with a response explaining why they are not comments on the Draft PDARP/PEIS.

- 1-13 Comment:** Commenters questioned the length of the document and wondered if a shorter document would be a better format for soliciting public input.

**Response:** The Trustees note that the PDARP/PEIS is a comprehensive document. The content and level of detail is considered necessary to present the injury assessment, restoration plan, restoration alternatives, and environmental consequences analyses for the largest offshore oil spill in the history of the United States. To assist the public in review of the Draft PDARP/PEIS, an overview document and fact sheets were also prepared and made available to the public concurrent with the public review period. These documents were made available at the public meetings and on the Internet.

- 1-14 Comment:** In addition to concerns with the comment process addressed in separate responses (length of comment period, location of meetings, how meetings were announced), some commenters expressed concerns about the ability of the public to understand the documents and comment productively because the public meetings included both the proposed Consent Decree and the Draft PDARP/PEIS. Commenters felt that the PDARP/PEIS and the Consent Decree are both complex processes and should be separate public comment processes.

**Response:** At the time the Consent Decree was released, the DOJ also announced the series of public meetings to be held in each of the Gulf states and Washington, D.C., in conjunction with the Trustees' meetings regarding the PDARP/PEIS which is being funded by the Consent Decree. Pursuant to 42 U.S.C. § 6973(d), the DOJ was only required to offer a public meeting in the affected area. However, because of the importance of the Consent Decree in funding and setting out requirements for the PDARP/PEIS, the Trustees and DOJ decided that presenting information and accepting comments on both of these documents would be the best means of communicating to the public.

Having combined meetings allowed the Trustees and DOJ to explain how these documents were connected without requiring members of the public to attend two different meetings. These meetings were announced in the *Federal Register* and on both the Trustees' and DOJ's website, and each meeting was announced in a local paper. The meetings were held early in the comment period in order to provide the public with information and still allow sufficient time to digest and submit comments. Upon release of the Draft PDARP/PEIS, the DOJ established a website providing the Consent Decree, fact sheets summarizing key points in the Decree, and the Trustees' Draft PDARP/PEIS. The Trustees similarly provided a website with the Draft PDARP/PEIS, fact sheets, overview document, and links to the DOJ website. The Trustees and DOJ sought to increase public awareness of both the Draft PDARP/PEIS and the proposed Consent Decree by bringing both matters to the public in a series of joint public meetings.

- 1-15 Comment:** Early in the comment period, the Trustees received a formal written request from the Environmental Defense Fund, the Gulf Restoration Network, the National Audubon Society,

the National Wildlife Federation, and the Ocean Conservancy plus additional comments during the public comment meetings requesting a 15-day extension of time to comment on the Draft PDARP/PEIS.

**Response:** The Trustees considered the comment extension and ultimately did not extend the comment period. The PDARP/PEIS underlies and supports a settlement that is pending before a United States District Court. On balance, while the Trustees understand the interest in having more time to comment, they favored the public interest in moving ahead toward restoration. Because of the complexity of the Draft PDARP/PEIS, the Trustees provided 60 days, rather than the normal 45 days, for public comment. The Trustees believe that a 60-day comment period provided sufficient time for a thorough review of the document and preparation of substantial comments by anyone who chose to make them, while providing the necessary time for the Trustees to review and consider all comments thoroughly and to produce a final Plan that meets all legal requirements and adequately addresses issues raised by the public.

To further assist the public's review of the Draft PDARP/PEIS, the Trustees provided a 50-page overview document and fact sheets. While comments must be made on the Draft PDARP/PEIS itself, these documents provided helpful background information and a summary of the key injury and restoration components of the Draft PDARP/PEIS.

### 8.3.1.3 Comments on the Proposed Settlement

**1-16 Comment:** Several comments pertained to the Consent Decree or other legal matters, and were not on the PDARP/PEIS, for example regarding the penalty, tax deductions, future penalties, criminal fines, and personal claims for liability or damages.

**Response:** The Trustees do not believe these comments are appropriately directed to the Trustees as they do not relate to the PDARP/PEIS. Therefore, no response is provided. However, the Trustees believe that DOJ has received similar comments on the Consent Decree, and understand that DOJ will provide its separate response to comments, which may cover this topic. The commenters are referred to <http://www.justice.gov/enrd/deepwater-horizon>, where DOJ will post its response to comments when completed.

**1-17 Comment:** One commenter suggested the Trustees use money from the Oil Spill Liability Trust Fund. "We further recommend that 20 percent of the proposed 1.1 billion payment into the OSLTF, which is approximately 225 million, be set aside to use exclusively for the establishment and funding of the Gulf Coast Regional Citizen Advisory Council. This interest could be offset by using the annual support - - this amount of money could be used to support the operation's continual and long-term sustainability."

**Response:** The amounts paid into the Oil Spill Liability Trust Fund are controlled by statute: 26 U.S. Code § 9509 and Subtitle F of Public Law 112-141 (the RESTORE Act). The Trustees cannot alter the amounts allocated to the fund.

**1-18 Comment:** The Trustees received several comments expressing either general support or general disfavor for the settlement, but which did not raise issues in the PDARP/PEIS. For

example, “we’re really glad to see the consent decree was released and is moving forward,” or “I do not agree or support the current split of the Oil Spill Settlement.”

**Response:** Because no specific issues regarding the PDARP/PEIS are raised by these comments, the Trustees cannot provide a response. However, the Trustees believe that DOJ has received similar comments on the settlement in the Consent Decree, and understand that DOJ will provide its separate response to comments, which may cover this topic. The commenters are referred to <http://www.justice.gov/enrd/deepwater-horizon>, where DOJ will post its response to comments when completed.

- 1-19 Comment:** Several commenters raised concerns that BP and other responsible parties should be held accountable for all damages. For example, “BP is completely responsible for the clean up and restoration to the Gulf after the spill, although for many it is too late-the damage was so extensive-any monies required for this task must come from them and any monies from them” or “bp has to pay out and those responsible sued etc. this planet must be treated with respect!” or “BP and all the other irresponsible companies responsible for the Deepwater Horizon disaster should be held accountable until all life is back to normal in [the Gulf]!”

**Response:** Implementation of the PDARP/PEIS, which is funded by the settlement, is intended to mitigate all damages to natural resources legally attributable to this massive oil spill. That sum will not address all injuries to the Gulf, injuries which stem from multiple causes, but should redress all those resulting from the spill—precisely what the law—the Oil Pollution Act—provides for here: damages for injury, destruction, or lost use of natural resources resulting from the spill or other incident in question (33 U.S.C. Sections 2702[a] and [b][2][A]). This includes a reserve fund of up to \$700 million for injuries or conditions unknown now that might manifest later. The PDARP/PEIS and settlement thereby hold BP accountable for injuries that Macondo Well and DWH caused in the Gulf by liquidating now the cost of restoration over time.

- 1-20 Comment:** Several comments were received expressing that the amount for natural resource damages was too low, for example stating, “This settlement should only be considered payment for the first 15 years, the total sum should be 1 trillion dollars because the harm will last a century,” or “\$8 billion - amount BP is offering \$44 billion - amount BP made in 2014 5 trillion - estimated number of larval fish killed in the oil spill, fish that would have become food for the ecosystem and humans had they survived If BP paid just one penny for each of those fish (completely discounting the economic effects of the region and other environmental damage already estimated to be in the many millions), that’s 50 billion.”

**Response:** Several commenters suggested that the overall settlement for natural resource damages is too low. None of the commenters provided any scientific or legal basis or justification for their position. Based on the Trustees’ injury assessment and proposed ecosystem restoration approach, the Trustees are satisfied that if the settlement money is expended in conformance with the programmatic plan proposed in the PDARP/PEIS, the public will be made whole for the loss of natural resources and services suffered as a result of the DWH incident. Accordingly, the Trustees believe the settlement is fair, reasonable, and in the public interest. OPA regulations allow the Trustees to settle claims for natural resource damages “...at

any time, provided that the settlement is adequate in the judgment of the trustees to satisfy the goal of OPA and is fair, reasonable, and in the public interest” (15 CFR § 990.25). In this case, the Trustees have concluded that the settlement provides a reasonable approach to achieving the goals of OPA to make the public and the environment whole, is a fair and reasonable result, and advances the public interest. To reach this conclusion, the Trustees followed requirements set forth in OPA to assess the injured natural resources and the impact of restoration planning. Following OPA regulations, the Trustees determined whether the DWH incident injured natural resources or impaired their services (15 CFR § 990.51) and quantified the degree and the spatial and temporal extent of those injuries and loss of services (15 CFR § 990.52). The assessment process and the determination and quantification of injuries and service losses are described in Chapter 4 of the PDARP/PEIS. The Trustees used a variety of standard scientific approaches, appropriate to the nature of the resource and injury being studied, and relied on years of sampling, modeling, and analysis to determine that the DWH incident caused injuries to virtually all marine and estuarine habitats impacted by the oil, from the deep sea to the shoreline. The Trustees developed and evaluated alternatives for comprehensive restoration planning and determined the impact of the alternatives (15 CFR § 990 and 42 USC § 4321, et seq.). As a result, the Trustees determined that a comprehensive ecosystem-wide programmatic restoration plan was warranted. That plan is designed to achieve five overarching goals: restoring and conserving habitat; restoring water quality; replenishing and protecting coastal and marine resources; providing and enhancing recreational opportunities; and providing for monitoring, adaptive management, and oversight of restoration. The Trustees particularly considered the early investment of the funds toward ecosystem-wide restoration and avoidance of further degradation of resources in determining the adequacy of the settlement. Taken all together, the Trustees are satisfied that the plan will achieve restoration goals and requirements. The consideration of alternatives and identification of the preferred programmatic plan is described in Chapter 5 of the PDARP/PEIS.

**1-21 Comment:** Two commenters sought information on the present value of the settlement: “I know you-all are here to talk about NRDA, but other projects, any ways to allocate or make the allocation easier in some way for somebody to discount back to a present value will be important, because there’s no way you can do some of these projects without that” and “The value of the settlement should be represented in present value so that the public can have a more meaningful estimate of what they are getting.”

**Response:** In the course of negotiations with BP, the governments tested the extent to which changing various factors (e.g., discount rate, interest accrual, payment stream duration and distribution) would affect the value of the settlement. The governments did not calculate an official or consensus present value for the settlement. While most people would likely agree with the basic principle of present value—that a dollar in hand today is of greater value than a dollar received at a later time—many would disagree over the best way to measure that difference in value. Present value calculations are used for many different purposes, and even experts in the field hold varying views over how best to set one of the parameters that often drives a present value calculation—the discount rate. In general, the lower the discount rate, the higher the present value of future receipts (and vice versa). The discount rate employed will

often vary with who makes the calculation and its purpose. Should one apply a constant discount rate or reduce the rate over time? Practice varies. (See Arrow et al. 2014.) Should the discount rate differ depending upon whether one is evaluating public projects instead of private investments? Some think so. (See Jawad & Ozbay 2006.) Should one use a discount rate at the lower or higher end of the typical range for such analysis? The U.S. Office of Management and Budget suggests the answer may vary with the circumstances (OMB 2003). Regardless of the rate-setting approach one employs, where the rates of inflation, interest, and return on monies held by the federal government are low by historical standards—as they have been here for some time—the difference in value between a dollar received today and one received sometime in the future tends to be less. In any event, after analyzing as part of settlement negotiation the concerns captured by the concept of present value, along with many other factors, the governments concluded that BP’s settlement payments meet key settlement objectives: sufficient punishment and deterrence (specific and general), appropriate funding for restoration of natural resources injured by the spill, and proper re-payments for other sums owed the governments (e.g., assessment and removal costs).

- 1-22 Comment:** One commenter expressed support for the 15-year implementation of the payout plan: “One of the aspects of it, the 15-year implementation of the payout time, while that sounds like a long time, frankly, I think it's a good thing because I'm not sure that we're ready to spend money really, really fast right now.”

**Response:** The Trustees acknowledge the comment.

- 1-23 Comment:** Several commenters are concerned about residual oil, residual dispersants, and lingering health or safety issues associated with the spill. Some local governments commented that oil remained in the environment in their jurisdictions. Some noted that no oil should be left behind. For example, “There needs to be a removal of the toxins, a restoration of the delicate habitat, and payment to the small and large fishermen who lost their ability to continue their commerce in the area. Investigate remedies using biologic petroleum eating organisms, or remove the sunken toxic substances and allow the area to get to a point where it tests clean,” or “The settlement is not adequate because there’s not enough to remove the millions of barrels of oil from the marsh, from the Gulf floor, and all that will continue to wash up on our shorelines and marsh for years to come.”

**Response:** The Trustees acknowledge and agree that some MC252 oil remains in the environment. This settlement takes a reasonable approach to address such oiling, in light of all the previous removal and restoration. First, the Unified Command concluded active removal of oil in April 2014. This decision was based on a net environmental benefit analysis, after determining that further removal of oil would cause harm to the environment. That decision was made before this settlement. See OSAT-1 (2010, p. 52); OSAT-2 (2011, pp 3, 7-8, 33-34); OSAT-3 (2013); U.S. v. BP et al. (2015b, p. 83). Second, the Coast Guard can continue to respond to an oiling event and nothing in the Consent Decree prevents the Coast Guard from undertaking any needed removal or response actions in the future, for example, if new tar mats appear. Indeed, the Consent Decree allows the Coast Guard to recoup the costs of any such actions from BP, as long as the oil can be proven to be from Macondo (Consent Decree ¶165[a]).

Thus, if there are future oiling events, response and removal actions are allowed at BP's expense. Third, the NRD injury assessment demonstrates ongoing and future ecological risks, so the commenters are certainly correct as to continuing ecological losses. But the restoration plan is specifically intended to address those very problems, and thus the settlement will allow the Trustees to take steps to fix and restore those conditions. Further, the Trustees can, if they choose, perform shoreline restoration that includes removal of residual oils where they deem such removal to be beneficial to restoration.

- 1-24 Comment:** One commenter expressed concern that the responsible party should not be in control of response actions, stating, “They sunk the oil. They sunk it because they pay by the barrel of oil, not by how many barrels they clean up, how many barrels they sunk. I was told they have a tarmac around the oil well, 10 miles, the size of Rhode Island. Do you realize that every time they put a net in there, they go through there and they pull it through the net again? Some person like my husband that fixes it, gets it again. It is toxic. I would hope and I pray that y’all don’t ever let this happen again, that they spray this. Please don’t give the spiller the right to control the spill again because when he does, he damages everybody else.”

**Response:** These concerns are outside the scope of Natural Resource Damage Assessments under the Oil Pollution Act of 1990 (OPA), but the Trustees hope that restoration of natural resources found in the Gulf will eventually help restore the way of life and livelihood described by the commenter. Second, while many of the Trustees play some role in the response advisory or otherwise, this is separate and apart from their role as Trustees. In the role of Trustees, they do not set policy regarding future response actions. Furthermore, neither the Trustees nor anyone else entrusted BP or any other liable party with control of the response to the spill; rather, BP’s vast economic wherewithal was directed to implement the response choices authorized by the relevant government authority using its broad authority as on-scene coordinator for offshore spills—supported by many federal and state agencies (including some of the Trustees) and drawing on BP and others who were integrated into the federal response structure. The U.S. Coast Guard authorized and directed response actions, based on the information and other resources that were available. See U.S. v. BP et al. (2015a, par. 24) and U.S. v. BP et al. (2015b, p. 111, lines 11-14).

- 1-25 Comment:** One commenter noted that it is “particularly encouraging to see the Trustees commit \$37 million to establish and maintain a Gulf-wide environmental data management system, and this system should be publicly accessible and it should also be part of a formal data-sharing plan that the Trustees should develop.”

**Response:** The Trustees are glad that members of the public are pleased to see \$37 million allocated to establish, populate, manage, and maintain a Gulf-wide environmental data management system. This system will indeed be publicly accessible (Consent Decree ¶23). The Trustees have strived throughout the damage assessment process to make data publicly available as soon as feasible. Sometimes data must be processed for quality prior to publication and/or agreements must be established with other parties and scientists cooperatively collecting data. The Trustees do not believe a formal data-sharing plan is necessary at this time, but will continue to strive to make data public as soon as possible.

### 8.3.1.4 Other Comments Not on the PDARP/PEIS

**1-26 Comment:** A commenter submitted a letter that asserts a claim for payment for services, but does not comment on the substance of the PDARP/PEIS or settlement.

**Response:** The letter contains no substantive comments on the PDARP/PEIS that require a response.

**1-27 Comment:** A number of comments raised issues not related to the evaluation of the Consent Decree and/or the PDARP/PEIS.

**Response:** The Trustees acknowledge receipt of these comments. While all comments received were considered, those that are unrelated to the proposed action are not addressed in this process.

**1-28 Comment:** The Trustees received several comments about the financial suffering and other hardships of communities and individuals as a result of the DWH oil spill.

**Response:** These concerns are outside the scope of Natural Resource Damage Assessments under OPA, but the Trustees hope that restoration of natural resources found in the Gulf will eventually help restore the way of life and livelihood described by the commenter. Our role as Natural Resource Trustees is to address injuries to the natural environment. Individual and commercial claims are handled separately from this process. As part of the comprehensive, integrated ecosystem restoration portfolio, the Trustees allocated restoration funds across Restoration Types, making investments regionwide, in the open ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and associated habitats, the Trustees expect to maximize the likelihood of appropriately compensating the public for all the resources and services injured by the spill.

## 8.3.2 Chapter 2: Incident Overview

### 8.3.2.1 General/Overall Comments on the Incident

**2-1 Comment:** The commenter requested that the Trustees include “humans” as being affected by the lighter oil compounds evaporating from slicks and exposing air-breathing organisms. Specifically, the commenter noted, “Page 2-2 [Section 2, Executive Summary], Executive Summary of the DEIS and Restoration Plan states that ‘...some lighter oil compounds evaporated from the slicks, exposing air-breathing organisms like marine mammals and sea turtles to noxious fumes at the sea surface.’ I recommend adding ‘humans’ to marine mammals and sea turtles since people also breathed the noxious fumes from the oil spill at the sea surface.”

**Response:** Assessment of human health impacts and matters of public safety are beyond the scope of Natural Resource Damage Assessments under the Oil Pollution Act of 1990 (OPA).

**2-2 Comment:** The commenter requested that the Trustees require mitigation for the loss of methane from the spill, citing Section 2.3.1 (Release of Oil and Natural Gas).

**Response:** For the methane to directly impact climate it must enter the atmosphere. However, the methane released during the DWH spill was largely dissolved into the deep sea, below approximately 1,100 meters deep, and never reached the surface or atmosphere. Evidence for this includes the high concentrations of methane detected within the deep-sea plume during the spill (Joye et al. 2011; Valentine et al. 2010), the relative absence of methane detected in shallower seawater (Camilli et al. 2010; Joye et al. 2011; Valentine et al. 2010), and the low concentration of methane measured in air above the spill zone consistent with natural background levels (Ryerson et al. 2011). In addition, the extremely low flux of methane measured at the sea-air interface during the spill was used to estimate that less than 0.01 percent of the total methane released had escaped to the atmosphere (Yvon-Lewis et al. 2011). The balance (>99.99 percent) had remained in the deep sea where it was consumed by bacteria (Kessler et al. 2011). As such, the effect of the methane released during the DWH spill on climate as a greenhouse gas is negligible.

References: Camilli et al. (2010); Joye et al. (2011); Kessler et al. (2011); Ryerson et al. (2011); Valentine et al. (2010); Yvon-Lewis et al. (2011).

### 8.3.3 Chapter 3: Ecosystem Setting

#### 8.3.3.1 General/Overall Comments on the Ecosystem Setting

**3-1 Comment:** The commenter requested that on Section 3, Executive Summary, the Trustees list subsidence under “human stressors” because excessive withdrawal of water and oil/gas has caused significant subsidence in parts of coastal Texas and Louisiana.

**Response:** The Trustees acknowledge the comment and have revised the sentence in Chapter 3, Executive Summary, in the Final PDARP/PEIS to reflect the comment.

**3-2 Comment:** The commenter requested that, in Section 3.4 and Section 3.4.1, the Trustees add marine organisms and their reproductive elements to the discussion of transport since eggs, sperm, and larvae follow the same transport path as nutrients, sediments, and organic matter and become organic matter after they die.

**Response:** The Trustees acknowledge the comment and have revised the sentence in Chapter 3, Section 3.4, of the Final PDARP/PEIS to reflect the comment.

### 8.3.4 Chapter 4: Injury to Natural Resources

#### 8.3.4.1 General/Overall Comments on the Injury to Natural Resources

**4-1 Comment:** Multiple commenters submitted statements expressing their agreement, commendation, and appreciation of the excellent and comprehensive job of assessing injuries and describing the impacts to the ecosystem in the document.

**Response:** The Trustees acknowledge and appreciate the comments.

**4-2 Comment:** Morris et al. 2015b is cited but isn't in the references.

**Response:** The full citation is in the references section, and the report is available in the Administrative Record (<https://www.doi.gov/deepwaterhorizon/adminrecord>).

- 4-3 Comment:** Commenters expressed concern about the effectiveness of the response, including concerns that dispersants were sprayed on individuals, that tar balls continue to wash up on shore, and that oil is still present on the bottom of the sea floor.

**Response:** The Trustees have noted the magnitude of the response effort in the PDARP/PEIS. However, under OPA the objective of the PDARP/PEIS is to assess the nature and magnitude of injuries to natural resources and the services they provide arising as a result of the spill and the associated spill response actions. Thus, critiques of response operations or effectiveness and opinions regarding the human health aspects associated with the release are beyond the scope of Natural Resource Damage Assessments under the Oil Pollution Act of 1990 (OPA).

- 4-4 Comment:** The commenter, referring to Table 4.6-18 and Figure 4.6-56, noted that the assessment does not specifically indicate how many miles and acres of “state lands” were oiled, and asks if the “state lands” include lands owned by local governmental entities. The commenter asks where they can find information about the percentage of total miles of oiled wetland described in Louisiana that occurred in Plaquemines Parish.

**Response:** Table 4.6-18 parses out the total miles oiled for beaches by federal and state lands. The state lands in this table and Figure 4.6-56 would therefore include lands owned by local governmental entities. The Trustees did not quantify miles and acres of oiled wetlands by parish. Any interested party could download the shapefiles of the shoreline oil exposure database via ERMA (<http://response.restoration.noaa.gov/maps-and-spatial-data/environmental-response-management-application-erma/erma-gulf-response.html>) (NOAA 2015) and analyze this with specific GIS data.

- 4-5 Comment:** The commenters asked whether takings under the Marine Mammal Protection Act (MMPA)/Endangered Species Act (ESA) protections were enforced under separate settlements or added to the value assessed for injury under the NRDA. The commenters claimed that if they were included in the NRDA settlement, the proposed allocation appears insufficient.

**Response:** The federal government did not prosecute any claims for takings under the MMPA or ESA. The presence of ESA- and MMPA-protected species (e.g., marine mammals, sea turtles, or birds) in the DWH footprint was a significant consideration for designing studies and interpreting data to better understand sublethal and delayed effects from oil and oil-related activities to marine mammals. Rather than attempt to assign a dollar value to lost resources, the Trustees 1) quantified injury by using metrics that best characterized injuries to each specific resource and 2) recommended approaches to best restore Gulf resources. The recommended comprehensive integrated ecosystem restoration plan then looks at the Gulf resources holistically, with the goal to improve and maintain healthy marine habitats and resources (including protected marine mammals, sea turtles, or birds), increasing the public access to these resources, and enhancing the quality of these recreational activities. Consequently, the Trustees did not attempt to identify, quantify, or assess a monetary penalty for any takings as defined by the ESA/MMPA.

**4-6 Comment:** The commenter noted that “it is really hard to imagine that the assessment of the damages is complete or that the monetary value proposed to settle the public claims for natural resource damages is the total amount required to fully restore the public trust resources of the Gulf region, considering this restoration plan considers injuries to such a wide array of resources, including everything from brown pelicans to soft corals, sea turtles, marshes, oysters, sperm whales, 21 other species of marine mammals, and more (water column resources). Many species of animals (from sperm whales to small marsh periwinkles), plants (e.g., phytoplankton on smooth cord grass), and many other species that have yet to even be discovered were killed, injured, or impaired for life.” The commenter noted that this value cannot be truly estimated.

**Response:** The Trustees determined the scale of the impact of the oil spill by directly quantifying the injury experienced by a series of representative species and habitats selected to cover a broad range of ecosystem services. While the Trustees were unable to address all potentially affected ecosystem services and employ all possible assessment tools, they believe that the magnitude and ecosystem focus of the restoration plan will result in producing benefits to the full range of ecosystem services impacted by the spill. Based on the Trustees’ injury assessment and proposed ecosystem restoration approach, the Trustees are satisfied that if the settlement money is expended in conformance with the programmatic plan proposed in the PDARP/PEIS, the public will be made whole for the loss of natural resources and services suffered as a result of the DWH incident. Accordingly, the Trustees believe the settlement is fair, reasonable, and in the public interest. OPA regulations allow the Trustees to settle claims for natural resource damages “...at any time, provided that the settlement is adequate in the judgment of the trustees to satisfy the goal of OPA and is fair, reasonable, and in the public interest” (15 CFR § 990.25). In this case, the Trustees have concluded that the settlement provides a reasonable approach to achieving the goals of OPA to make the public and the environment whole, is a fair and reasonable result, and advances the public interest. To reach this conclusion, the Trustees followed requirements set forth in OPA to assess the injured natural resources and the impact of restoration planning. Following OPA regulations, the Trustees determined whether the DWH incident injured natural resources or impaired their services (15 CFR § 990.51) and quantified the degree and the spatial and temporal extent of those injuries and loss of services (15 CFR § 990.52).

**4-7 Comment:** The commenter noted that given the length and technical complexity of the report and supporting information, they were still in the process of reviewing the details of the assessment, the conclusions derived from them, and the proposed processes for turning the conclusions into concrete restoration plans. The commenter’s review raised some questions regarding the technical and scientific aspects of the assessment. The commenter noted that the conclusions derived from this report may have possible implications for future policy, regulations, contingency planning, and governance activities moving forward.

**Response:** The Trustees acknowledge the comment.

**4-8 Comment:** The commenter requested that to supplement the approaches applied to assess injury to sea turtles, the Trustees should also synthesize sea turtle data from NRDA field studies, stranded carcasses collected by the National Marine Fisheries Service (NMFS) SEFSC Sea Turtle

Stranding and Salvage Network, historical data on sea turtle populations, and the published literature. In other words, data existed from which these approaches could have been applied, just as they were applied to the marine mammals; they should work as well for sea turtles. Additionally, the commenter requested that if the Trustees applied these data to sea turtles, then the statement in Section 4.1.7 of the Draft PDARP/PEIS should be corrected accordingly.

**Response:** The marine mammal and sea turtle assessments used similar general categories of information, as suggested by the reviewer. The text has been adjusted accordingly to clarify that we included sea turtle data from NRDA field studies, stranded carcasses, historical data on sea turtle populations, and the published literature.

- 4-9 Comment:** The commenter requested that the injury assessment “include environmental impact statement on the air quality after the *Deepwater Horizon* incident.” The commenter stated that “to ensure public safety, air quality should be monitored throughout the area for a wide range of chemicals that are known to be associated with crude oil, including volatile organic compounds (VOCs). Yearly inspection of the technology involved should be an addition to the overall draft to ensure elimination of future such incidents.”

**Response:** Human health impacts and issues of public safety are beyond the scope of Natural Resource Damage Assessment under OPA.

- 4-10 Comment:** The commenter noted that the settlements resolving the NRDA and other civil penalties (RESTORE) are inappropriate because a comprehensive valuation of losses has not been fully quantified. To use an example, the commenter stated that “oyster reefs provide many consistent benefits, but one of the benefits it does provide is a livelihood for many commercial fishermen. We don’t think those types of benefits have been quantified, and therefore, we don’t think that the proposed amount is really adequate to address any major potential fisheries.”

**Response:** Determining and addressing private party economic loss claims is beyond the scope of the Natural Resource Damage Assessment under OPA. The Trustees hope that restoration of natural resources found in the Gulf will eventually help restore the way of life and livelihood of the public.

- 4-11 Comment:** The commenter noted that they recognize that many specifics of the injuries have not been fully measured and that some are certainly under-recognized. The commenter requested that “the PDARP should clarify that the Trustees’ injury assessment represents a snap-shot of the currently-known dimensions of overall injuries, that research is ongoing to more fully realize impacts, and that monitoring dollars put in place by the settlement will help further elucidate those impacts.” The commenter further recommended “that the Council note the limitations of the analysis, clearly describe the factors that were included in the injury calculations, and describe anticipated future work to understand and monitor injuries.” The commenter identified issues related to gaps and uncertainties in the existing science, as well as recommended clarifications to be addressed through implementation of the PDARP/PEIS and ongoing monitoring.

**Response:** As described in Section 4.11.5, the Trustees did not fully quantify all direct and indirect injuries due to the vast geographical and ecological scope of impacts. However, as detailed in Chapter 5, they did document evidence of a number of injuries that could not be explicitly quantified and this supported the approach of an ecosystem-based restoration. Further, for many unquantified injuries, additional time and more study is not likely to substantially change the Trustees’ understanding of the nature or extent of injuries. Despite these uncertainties, the information gathered and analyzed is sufficient to adequately allow the Trustees to form reasonable scientific conclusions about the nature and scope of injuries. During restoration implementation the Trustees recognize that additional ecological monitoring and other scientific activities may be needed to address key uncertainties or large scientific information gaps that could limit restoration planning and implementation for particular resources. In developing these science and monitoring activities the Trustees will consider specific recommendations received on this PDARP/PEIS.

- 4-12 Comment:** Commenters stated that the PDARP/PEIS is incomplete because it does not value ecosystem services. The commenter mentioned the “cost of people, for example, not being able to swim along those coast or these baby dolphins.” The commenter referred to the work of economist Kenneth Arrow<sup>1</sup> and to a report by the National Academies regarding valuation of ecosystem services for the Gulf of Mexico.<sup>2</sup> It seems that the commenter is referring to economic techniques for assessing the economic value of lost ecosystem services such as recreational loss studies and contingent valuation studies.

**Response:** As stated in the PDARP/PEIS, in determining the injury, the Trustees evaluated not only the extent of injuries to natural resources, but also to the services those resources provide (Section 4.1, Executive Summary). To quantify the degree and extent of the injuries, the Trustees compared the injured resources or services to baseline conditions. Based on the vast scale of the incident and potentially related resources, the Trustees employed an ecosystem approach to the assessment (Section 4.1, Executive Summary). Among the methods used by the Trustees was one mentioned in the National Academies report—a revealed preference economic “travel-cost” approach to assess the lost value of recreational use of the Gulf of Mexico ecosystem, which quantified the value of, among other recreational activities, one of

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<sup>1</sup> The commenter stated that economist Kenneth Arrow “pioneered” economic techniques for estimating the damages from the *Exxon Valdez* oil spill and that he won a Nobel Prize for that work. In fact, Dr. Arrow received the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel in 1972—over 16 years before the *Exxon Valdez* oil spill—for “pioneering contributions to general economic equilibrium theory and welfare theory.” Dr. Arrow was a co-chair of the NOAA Blue Ribbon Panel on the use of contingent valuation for valuing natural resource damages.

<sup>2</sup> It appears that the commenter was referring to the Interim Report *Approaches for Ecosystem Services Valuation for the Gulf of Mexico after the Deepwater Horizon Oil Spill* by the Committee on the Effects of the Deepwater Horizon Mississippi Canyon-252 Oil Spill on Ecosystem Services in the Gulf of Mexico, Ocean Studies Board, Division on Earth and Life Studies, National Research Council of the National Academies.

those specifically noted by the commenter—the value of not being able to swim in the Gulf (Section 4.10).

As described in Chapter 5 (Restoring Natural Resources), the Trustees have used the assessment results presented in Chapter 4 (Injury to Natural Resources) to formulate restoration approaches targeted to restoring the full range of resources and ecosystem services injured from this incident (Section 4.1). The Trustees’ programmatic goals as stated in the PDARP/PEIS are to: restore and conserve habitat, restore water quality, replenish and protect living coastal and marine resources, provide and enhance recreational opportunities, and provide for monitoring, adaptive management, and administrative oversight to support restoration implementation (Section 5.3.1). The Trustees created these goals with the specific intent to restore and compensate for ecosystem services impacted by the spill.

The commenter is correct that the Trustees did not use a contingent valuation approach to value ecosystem services here, but the commenter’s proposed approach is not required by law or regulations. In fact, the Oil Pollution Act regulations contain a clear preference for basing the amount of natural resource damages sought from the responsible parties on the costs of implementing a restoration plan that would repair or replace injured natural resources where practicable and compensate the public for interim losses of natural resource and ecosystem services until the ecosystem has fully recovered. That is the primary approach to damage assessment that the Trustees adopted in response to the *Deepwater Horizon* spill and the basis for the preparation of this PDARP/PEIS. However, the regulations also give Trustees discretion to use economic methods to place a value on natural resource injuries, as an alternative way to determine the scale of restoration actions needed to address those injuries. One of those authorized methods is known as a total value study, which is an economic study designed to measure the total economic value of a natural resource—use value, indirect use value, option value, and nonuse value. The Oil Pollution Act regulations allow Trustees to base damages on total value studies when it is impractical to address the natural resource injuries by providing natural resources and/or natural resource services of the same type and quantity as those that were lost. See 15 CFR § 990.53(c)(3).

The Trustees performed a contingent valuation total value study for the *Deepwater Horizon* incident. However, because the Trustees concluded that natural resource injuries and ecosystem service losses in this case can be addressed by the preferred ecosystem-wide restoration alternative described in the Final PDARP/PEIS, the Trustees did not complete that study and did not rely on it (Section 5.2.1).

**4-13 Comment:** The commenter noted that water quality is terrible and is causing pimples and rashes. The commenter noted that he has been a Gulf Coast fisherman all his life, works every day on the water, and is afraid of the water.

**Response:** Human health impacts and issues of public safety are beyond the scope of Natural Resource Damage Assessment under OPA.

**4-14 Comment:** The commenter noted that although the toxicity of oil and other effects were studied in a variety of specific species, the PDARP/PEIS fails to extrapolate these findings to a broader set of species within those guilds or trophic levels, much less the entire ecosystem. For example, a species of amphipod was used to represent burrowing soil organisms, and although 407 metric tons of the amphipod were removed due to oiling, no predictions of injury to other similar species are made. The commenter stated that this connection is consistently not made for all of the representative species and therefore greatly underestimates the damages to organisms and many trophic levels.

**Response:** As described in Section 4.1.3, the Trustees determined that it was not feasible to study every species or habitat potentially affected by the incident, in all locations exposed to oil or response activities. Instead, they employed an ecosystem approach to the assessment, by evaluating injuries to a suite of representative habitats, communities, and species, as well as select human services and ecological processes and linkages. The Trustees used the information collected to develop scientifically informed conclusions not only about injury to the resources, processes, and locations studied, but also, by scientific inference, about injury to resources, ecological processes, and locations that they could not directly assess. Therefore, by planning and conducting restoration focused on injuries to these representative species, habitats, and communities, the Trustees ensured that the services that flow from the restoration projects will benefit both the representative and similar species, habitats, and communities. Further, the PDARP/PEIS concludes that an ecosystem-level injury has occurred, and accordingly restoration planning focuses on restoring for injuries to the individual resources as well as to injuries at an ecosystem level.

#### 8.3.4.2 Natural Resource Exposure: Dispersants

**4-15 Comment:** The commenter requested that the Trustees include an analysis of the environmental benefits of surface dispersant application to offshore mammals, turtles, birds, and shoreline resources in the PDARP/PEIS.

**Response:** The Trustees have noted the magnitude of the response effort in the PDARP/PEIS (for example, see Section 4.2.1); however, the objective of the PDARP/PEIS is to assess the nature and magnitude of injuries to natural resources and the services they provide arising as a result of the spill and associated spill response actions and not to critique response operations or effectiveness.

**4-16 Comment:** The commenter requested that the text in Section 4.2.6 “should indicate that research showed that the toxicity to biota in the upper water column was minimal and returned to background levels within hours of dispersant application based on field monitoring using fluorescence, field collected chemistry data, and laboratory toxicity studies with field collected samples. General statements...give a picture that the dispersant application was not effective and was harmful, when exactly the opposite is true.”

**Response:** The statement the commenter was concerned about in Section 4.2.6 is factual, stating that natural and chemical dispersion result in water column exposure to oil droplets and chemicals derived from oil dissolution and the dispersant.

**4-17 Comment:** The commenter requested that in two places in Section 4.2.7, the source of dispersant application be clarified as subsea injection.

**Response:** The Trustees have made the suggested change.

**4-18 Comment:** The commenter noted that in Section 4.2.7, “it would be helpful to indicate the concentration of dispersants associated in these areas to provide better understanding of the potential environmental impacts. This also is true for the other areas where dispersants are listed in Table 4.2-2.”

**Response:** Table 4.2-2 is intended as a summary table. As indicated in the table title, details are presented in the indicated sections.

**4-19 Comment:** The commenter requested that in Section 4.3.1.2.3, the identification of dispersant as nail polish remover should be removed. The solvent in nail polish remover is acetone (Cutex nail polish remover MSDS), a highly flammable solvent, which is not representative of the solvents used in oil dispersants. This reference should be revised to something more closely associated with the solvents used in dispersants.

**Response:** The Trustees have changed the example from nail polish to paint thinner (light hydrotreated petroleum distillate CAS# 64742-47-8, MSDS <http://isites.harvard.edu/fs/docs/icb.topic869246.files/thinx.htm>, accessed 12/10/2015) (MDL 2001).

**4-20 Comment:** The commenter noted that in Section 4.3.3.1.1, “the Dispersant Toxicity section did not state the lengths of time the LC20 and LC50 values were conducted. This is critical as standard times of 48-96 hours far exceed field exposures times. Water column species were only exposed to elevated dispersed oil levels for a matter of hours before dilution to background levels. (See CROSERF reference). Studies reflecting actual field exposure would have substantially reduced the impacts of dispersant even more than the minimal effect the analysis states.”

**Response:** Box 7, “Dispersant Toxicity,” in Chapter 4 is intended to show that the toxicity of the dispersant is orders of magnitude less than the toxicity of the dispersed oil, regardless of the length of the exposure time. Dispersed oil is not discussed in Box 7. The Trustees revised the discussion of the toxicity tests in Box 7 and other relevant locations to specify the 96-hour length of the test. The methods for a 96-hour toxicity test vary. Some tests are continuous exposure, some have contaminants renewed every 24 hours, and some tests are single exposure, where the organism is exposed to the contaminant at the beginning of the test and the effects of that single exposure are monitored for 96 hours. The CROSERF statement is overly general and not always applicable. After conducting hundreds of toxicity tests, the Trustees have shown that even short-term exposure to dispersed oil can have harmful effects to certain species and life stages.

- 4-21 Comment:** The commenter requested that in Section 4.4.3.1, the text should be modified: “to confirm that, of the 92 samples analyzed, two had detectable levels of PAHs, and add immediately following none contained dispersants, to clearly indicate this fact.”

**Response:** The Trustees have modified the text to reflect the comment.

- 4-22 Comment:** The commenter requested that the Trustees remove statements made in Section 4.5.3.2 referring to floc occurring where dispersants were applied, and further that the PDARP/PEIS should discuss another possible relationship between deep-sea dispersant injection and presence of floc. The commenter states that these relationships between surface dispersant application and floc are not supported by either Figure 4.5-9, showing locations where surface dispersants were not applied yet floc was present, or by the fact that in spill source areas near the wellhead, floc was present in areas where no surface dispersant was applied.

**Response:** These statements noted by the commenter are empirical observations of the data (floc thickness vs. dispersant application and surface oiled area), and do not convey that oil sinking from the surface due to dispersant application is the sole or even dominant source of the floc. The paragraphs preceding this statement and reference to Figure 4.5-9 in the PDARP/PEIS are collectively discussing contaminated marine oil snow generally, without distinguishing whether this originated from the sea surface or deep-sea plume(s) as the Trustees believe both mechanisms occurred. The Trustees also state (Section 4.5.3.2) that “Floc covering a vast area of the seafloor was also reported, particularly in areas where dispersants were applied (Passow 2014) or where sediment from the Mississippi River may have been distributed along with oil from the spill (Brooks et al. 2015; Hartwell 2015).” This statement indicates that surface dispersants were not the only reason floc may have accumulated, sediment in the water also was important on forming marine oil snow. Thus, there is no expectation that all floc must coincide with surface dispersant application.

References: BP (2014a); Brooks et al. (2015); Hartwell (2015); Passow (2014); Stout and German (2015).

- 4-23 Comment:** The commenter recommended that in Section 4.5.3.2, the chapter should be modified to delete the statement that aerial dispersant spray passes were conducted over the Alabama Alps and Roughtongue reefs. The commenter also noted that the width of the line on a summary graphic of spray missions is “not representative of the size of the actual swath width of the application. These lines had to be made considerably larger on the graph, because if the spray run was shown to scale it would not be too narrow to appear on the graph. This may have caused an incorrect analysis that spray runs were done over these reefs. Additionally, aerial dispersants operations were shown not to disperse the oil more than 10 meters in depth before being diluted to background levels. These reefs are at depths of 80-90 meters, i.e., well below the extent of dispersed oil or dispersants in the water column.”

**Response:** Although (as stated) floating petroleum slicks were documented “directly above” these reefs, the Trustees acknowledge that an actual aircraft spray mission(s) did not pass “directly above” either reef. Our review of the available aircraft spray paths (BP 2014a) indicates

aerial spraying of dispersants occurred approximately 1.3 nm from Alabama Alps on June 11 (1402 gal) and 23 (801 gal) and approximately 1.5 nm from Roughtongue Reef on June 14 (3000 gal). The PDARP/PEIS's statement (above) will be modified to reflect that aerial dispersants were applied nearby.

Nonetheless, the Trustees believe that oil dispersed into the water column—via physical or chemical processes—that formed aggregates with sinking marine snow did not universally sink straight to the bottom. The Trustees expect that subsea currents spread the marine oil snow during its descent (widening the swath). Evidence for this is found in the presence of sinking marine oil snow found in sediment traps near Viosca Knoll 826 during the active spill that were about 2.1 nm away from the closest aerial application. Also, as discussed in the specific paragraph commented upon, the Trustees have confirmed that exposure to Macondo oil occurred at the Alabama Alps mesophotic reef site, wherein oil was found in semipermeable membrane devices (SPMDs) deployed at about 65-69 m deep and about 5 m above the top of the reef (Stout & Litman 2015). This oil was attributed to sinking marine oil snow from the surface.

Thus, there is no expectation that marine oil snow (particularly up on the shelf where the impact of oil from the deep-sea plume is unlikely) only descended and was deposited on the seafloor immediately coincident with dispersant aerial spray swaths. Once the oil was dispersed into the water column forming aggregates with marine snow, it was spread laterally during its descent by subsea currents (BP 2014b; Stout & Litman 2015).

- 4-24 Comment:** The commenter noted that in Section 4.5.3.3, the chapter contains a statement indicating that “bottom sediment contained dispersant that came from plume fallout. It should be noted that the plume came from the subsea injection of dispersant and was not associated with the surface application of dispersant. Surface application did not create any dispersed oil/dispersant plume as it was shown that concentrations of dispersed oil were diluted quickly (within several hours) to background levels. No concentrations of dispersed oil was detected lower than 10 m by SMART monitoring.”

**Response:** As noted, the statement indicates bottom sediment contained dispersant that came from plume fallout. Throughout this section, “plume” has referred to the subsurface or underwater plume (see Figure 4.5-7 and Section 4.5.3.2).

- 4-25 Comment:** The commenter recommended that in Section 4.5.5.1, the text be clarified to read “subsurface oil/subsea injected dispersant plume” to assist readers in understanding the source of the dispersant plume being referred to.

**Response:** The Trustees believe that within the context of the section, the sentence clearly relates to the subsea plumes.

- 4-26 Comment:** Several comments stated that the dispersed oil and dispersants cannot persist in the water column, cannot result in the formation of marine snow, and cannot result in harm to biota, in part based on results of the OSAT Ecotoxicity Addendum (OSAT-1 2011). For multiple places in the PDARP/PEIS (Section 4.2.2.3, 4.2.3.1, 4.2.5, 4.2.5.1, 4.2.5.4), the commenter

requests that the Trustees both change and clarify language regarding the fate of dispersed oil, provide specific evidence of dispersed oil sinking to the sea floor, and highlight benefits of surface dispersant application beyond shoreline habitat protection.

**Response:** The OSAT testing cited in the comment used standard U.S. EPA testing methods and species that were intended to help the Federal On-Scene Coordinator (FOSC) decide whether additional response actions were warranted. The testing was not intended to conclusively evaluate whether dispersants and dispersed oil at the sea surface caused injury to natural resources. That burden fell to the Trustees, who concluded that standard EPA tests with standard EPA species would not adequately characterize potential harm for purposes of quantifying injuries and scaling restoration. The Trustees instead designed a toxicity program that included a broad diversity of species, life stages, ambient conditions, oil weathering states, and other variables, as described in Section 4.3. The results of the Trustees' toxicity program (Section 4.3) show that dispersed oil in the water column is harmful. The PDARP/PEIS was revised in Section 4.2.5 to highlight the nature of the dispersed oil.

The Trustees have noted the magnitude of the response effort; however, the objective of the PDARP/PEIS is to assess the nature and magnitude of injuries to natural resources and the services they provide arising as a result of the spill and associated spill response actions and not to critique response operations or effectiveness.

The phenomenon of marine oil snow formation and sinking is newly recognized but supported by recent research. Passow et al. (2012) recognized that a proliferation of mucus-rich marine snow comprised largely of oil-degrading bacterial (exopolymeric) substances had widely formed at the sea surface during the spill. This marine snow disappeared from the sea surface after about 1 month and is believed to have sunk to the seafloor, carrying oil from the surface (Fu et al. 2014; Passow et al. 2012). In support of this, Fu et al. (2014) demonstrated that chemically dispersed oil quickly (2 days) formed aggregates with sinking velocities on the order of 164-510 meters/day. These researchers state that "the application of a chemical dispersant to an oil slick increases the formation of much smaller oil droplets and disperses much more oil in the water column, compared to naturally/mechanically dispersed oil. These fine oil droplets not only facilitate formation of more marine oil snow flocs, but resulted in much higher oil content in the resulting marine oil snow." In fact, in their review of this newly recognized phenomenon, Vonk et al. (2015) suggest that proliferation/production of bacteria (exopolymeric) substances and the presence of dispersed oil—be it naturally or chemically dispersed—are two of the three (the third being presence of clay particles) conditions considered essential in formation and sinking of marine oil snow. Thus, the Trustees believe the formation and sinking of marine oil snow carried oil from the sea surface to the seafloor, including (at least some) oil that was chemically dispersed in the upper water column.

The Trustees acknowledge that there was a concurrent proliferation of marine snow within the deep-sea plume, which also eventually was deposited on the seafloor along with aggregated oil from, in this case, the physically and chemically dispersed oil in the deep-sea plume. This mechanism was only important in areas traversed by the deep sea plume, whereas the marine oil snow sinking from the surface likely covered a larger footprint owing to the more widely

spread surface oil. In support of this, Stout and German (2015) studied sediment trap samples collected at the shelf edge (Viosca Knoll 826) before, during and after the spill. These researchers show approximately 10 bbl/km<sup>2</sup> of oil sunk through the water column during the active spill in this (shallow) area, which was unaffected by the deep-sea plume.

References: Fu et al. (2014); Passow et al. (2012); Stout and German (2015); Vonk et al. (2015).

- 4-27 Comment:** The commenter recommended that in Section 4.8.4.3, the text be revised to remove the statement that *Sargassum* was exposed to oil and dispersant, noting that “No dispersant spray sorties were conducted over or near sargassum as that area was recognized as a valuable habitat, and the oil contained in the sargassum was not dispersible. It is recommended that dispersant be removed from the statement below, unless actual proof or evidence can be provided that dispersant was applied to sargassum and caused it to sink. The report should not speculate on potential impacts.”

**Response:** The Trustees have modified the text to remove the words “and dispersant” from the sentence referred to by the commenter.

- 4-28 Comment:** The commenter noted that “there was little mention of the use of dispersant and how it may have affected nearshore environments or organisms. This is a large oversight. If dispersant was studied in nearshore environments and none was found or no effect was found then this should be mentioned. There are numerous laboratory studies that have taken place investigating the effects of dispersant and none were reported, for wetlands or organisms. Many laboratory studies were used to confirm the toxicity of the oil and therefore quantify injury, but it was not indicated that this was done for dispersant. Injury from the dispersant should be included in the injury assessment or an explanation of why it was not included should be provided. This could also result in the underestimation of injury to nearshore ecosystems and animal populations.”

**Response:** This information is included in the PDARP/PEIS, although it is not summarized in a single location. Section 2.3.2 discusses the use of dispersant, including the observation that dispersant was not applied directly to nearshore environments or organisms. Section 4.2.2.3 discusses the persistence of dispersants, including evidence that dispersant-derived chemicals were detectable on oiled shorelines long after the spill, primarily in the form of trace amounts of surface residue balls (SRBs) on beaches. Thus, there is evidence that some dispersant-derived chemicals were transported to nearshore environments, even though the dispersant was not applied in those habitats. However, as discussed in Section 4.3.3.1.1, the Trustees found that dispersant chemicals were not nearly as toxic as oil and dispersed oil. Box 7, Dispersant Toxicity, summarizes the results of dispersant-only toxicity tests. Dispersant alone was orders of magnitude less toxic than dispersed oil to species such as mahi-mahi and oysters. Therefore, the Trustees concluded that injuries from oil and dispersed oil far outweighed injuries from exposure to dispersant alone, particularly in the trace quantities found in nearshore environments. Further, if dispersant was present in oiled shoreline areas evaluated or in source oil used in laboratory toxicity tests, the effects from the dispersant would be integrated with effects from the oil.

**4-29 Comment:** The commenter requested that in Section 4.2.2, the Trustees add “injected at the wellhead” to clarify that the dispersant entrained in the deep-sea plumes and entrained in plumes that rose through the water were the result of subsea injection of dispersants, and not aerial application of dispersants.

**Response:** The Trustees have made the suggested change to Section 2.2.

**4-30 Comment:** The commenter requested that in Section 4.2.2.3 the Trustees modify a sentence about surfactants used in Corexit EC9500A to the following: “The surfactants used in Corexit EC9500A dispersant are some of the safest available and are also used in baby shampoo and facial creams as well as dishwashing liquids,” to provide a better description of surfactants for reader understanding.

**Response:** The Trustees feel that the sentence in the PDARP/PEIS is accurate as written and no change was made.

**4-31 Comment:** The commenter stated that there is no reference to the fact that the toxicity research conducted and reported in the OSAT report showed no observable impacts more than background samples. This should be included. The commenter also noted that this section did not discuss the fact that surface applied dispersants were very effective on Macondo crude, the oil plus dispersant was no more toxic than the oil itself, and the amount (concentration) of dispersed oil in the water column quickly diluted to background levels. The standard LC50s, i.e., for continuous exposures for 48 to 96 hours, result in greater impacts than what biota in the ocean are exposed and are not really comparable to field exposures. The commenter stated that this has been confirmed by the Cooperative Aquatic Toxicity Testing of Dispersed Oil and the Chemical Response to Oil Spills: Ecological Effects Research Forum (CROSERF) report (Aurand & Coelho 2005), which stated that constant exposure testing does not realistically assess the risk to marine or coastal organisms when rapid dilution is possible.

**Response:** The OSAT testing cited in the comment used standard U.S. EPA testing methods and species that were intended to help the Federal On-Scene Coordinator (FOSC) decide whether additional response actions were warranted. The testing was not intended to conclusively evaluate whether dispersants and dispersed oil at the sea surface caused injury to natural resources. That responsibility fell to the Trustees, who concluded that standard EPA tests with standard EPA species would not adequately characterize potential harm for purposes of quantifying injuries and scaling restoration. The Trustees instead designed a toxicity program that included a broad diversity of species, life stages, ambient conditions, oil weathering states, and other variables, as described in Section 4.3. Further, the objective of the PDARP/PEIS is to assess the nature and magnitude of injuries to natural resources and the services they provide arising as a result of the spill and associated spill response actions and not to critique response operations or effectiveness.

**4-32 Comment:** The commenter requested that, in Section 4.2.5, the Trustees state that responders on the relief well vessels, skimming vessels, and ISB vessels were also exposed to the VOCs of the oil slicks and that this posed health issues.

**Response:** Assessment of human health impacts and matters of public safety are beyond the scope of Natural Resource Damage Assessments under OPA.

- 4-33 Comment:** The commenter requested that in Section 4.2.3, the Trustees precede the word dispersants with “subsea injected” to make clear that the dispersant did not come from the surface application of dispersant, but only from subsea injection.

**Response:** The Trustees agree and have made this suggested change in Section 4.2.3.

- 4-34 Comment:** The commenter requested that in Section 4.2.3, the Trustees add subsea injection. This will help readers understand where the dispersant came from and that it was not from surface application by aircraft or vessels.

**Response:** The Trustees agree and have made this suggested change in Section 4.2.3.

- 4-35 Comment:** The commenter requested that in Section 4.2.1, the Trustees add subsea injected, with the claim that surface applied dispersants were quickly dispersed to background levels within the top 10m of the water column. Further, the commenter questioned the factual basis of statements in the PDARP/PEIS indicating that dispersants became part of the surface oil slick, and in particular for timeframes and concentrations that were harmful.

**Response:** The Trustees do not feel the need to discriminate between sources of dispersant used during the DWH spill response as described in this section, which highlights that the spatial extent of response activities was immense. Figure 4.2-3, which the statement in question specifically references, shows both surface and subsurface application of dispersants. Further, work by several authors cited in Section 4.2.1 of the PDARP/PEIS demonstrates the long-term presence of dispersants in environmental media. See White et al. (2014); Payne and Driskell (2015a, 2015b); Stout (2015a, 2015b).

- 4-36 Comment:** The commenter requested that in Section 4.2.2.3, the chapter should state that “although surface application of dispersants temporarily increased dispersed oil concentrations in the upper area of the water column, it was shown that this temporary increase was at concentrations that did not have any harmful impact on biological species habiting this area based on measured chemical concentrations and results of toxicity tests with field collected samples.” The commenter noted that OSAT-1 (2011) published the results of toxicity studies of the aerial dispersant operations. Finally, the commenter requested: “Throughout this document use of the word dissolved referring to dispersed oil should be removed. Dispersed oil does not dissolve. Dissolving indicates that the dispersed oil would become inseparable from water and lose its identity. In fact, dispersed oil droplets of approximately the width of a human hair become neutrally buoyant and remain in the water column until they are biodegraded within a matter of days.”

**Response:** The OSAT testing cited in the comment used standard U.S. EPA testing methods and species that were intended to help the Federal On-Scene Coordinator (FOSC) decide whether additional response actions were warranted. The testing was not intended to conclusively evaluate whether dispersants and dispersed oil at the sea surface caused injury to natural

resources. That responsibility fell to the Trustees, who concluded that standard EPA tests with standard EPA species would not adequately characterize potential harm for purposes of quantifying injuries and determining restoration. The Trustees instead designed a toxicity program that included a broad diversity of species, life stages, ambient conditions, oil weathering states, and other variables, as described in Section 4.3. The results of this more expansive toxicity testing showed that application of dispersants can in fact increase the amount of oil to which organisms just below the sea surface are exposed, and this in turn results in an increase in the toxicity of the oil below the sea surface. Furthermore, the Trustees do not agree that dispersed oil does not dissolve. In fact, the dispersing of oil into droplets increases the surface area of the oil, and dissolution will occur as the surfactant micelle layer degrades. However, because the Trustees' toxicity testing showed that both dissolved oil constituents and oil droplets are toxic to aquatic biota, the PDARP/PEIS need not imply that the dissolution was the basis for concluding that near-surface biota were exposed to and potentially injured by dispersed oil. Therefore, the PDARP/PEIS has been revised accordingly in Section 4.2.2.3.

- 4-37 Comment:** For Figure 4.2-3, the commenter requested to replace “dropped chemical dispersant” with “quantitatively sprayed dispersant.” The commenter noted that “aerial application of dispersant is calibrated to each spray aircraft, the nozzles they use, and their application speed and altitude to ensure that precise dosages and droplet sizes are produced.”

**Response:** The Trustees have made the suggested change to Figure 4.2-3.

- 4-38 Comment:** The commenter noted that “it was shown by both fluorometry and water sampling that the surface application of dispersants led to dispersed oil entering the water column and within hours being diluted to background levels. Surface application did not create any measureable long lasting plumes. Aerial application applies a low dosage of dispersant over a very wide area measured in square miles; whereas subsea injection deposits dispersants continuously at one single spot (the 7 in pipe riser) in the ocean.” The commenter requested that throughout the document appropriate text be added to clearly indicate the results or statements that apply to subsea dispersant operations and those associated with surface application.

**Response:** The Trustees appreciate the comments and have endeavored to better discuss the differences between subsurface and surface application of dispersants. However, as indicated in other responses to comments in this section, the Trustees feel that the data disagree with this simple perspective of the fate of surface applied dispersants.

### 8.3.4.3 Benthic Resources Assessment

- 4-39 Comment:** The commenter requested that the Trustees add more information about potential impacts to deep-sea organisms, especially the Texas Flower Garden Banks. The commenter expressed a hope that they were in good shape.

**Response:** The Trustees designed and implemented an assessment of injuries to representative benthic resources generally grouped by depth for purposes of the NRDA. These include benthic resources in the deep sea, on the continental slope, and on the continental shelf. The Flower

Garden Banks were outside the footprint of impacts determined by the Trustees. Reviewers can access the Flower Garden Banks National Marine Sanctuary website (<http://flowergarden.noaa.gov>) (NOAA 2016b) for information on the status of sanctuary resources.

- 4-40 Comment:** The commenter noted that corals and sponges can take centuries to grow into a vibrant underwater habitat, and when an area is destroyed, it may never recover. These living structures provide shelter and a place to eat, breed, and raise young to thousands of fish and other sea creatures.

**Response:** The Trustees acknowledge and appreciate the comment.

#### 8.3.4.4 Gulf Sturgeon Assessment

- 4-41 Comment:** The commenter was interested in the influence the oil spill had on Gulf sturgeon behavior as described in the MS Canyon 252 Pre-Assessment Plan for the Collection of Data to Determine Potential Exposure and Injuries of Threatened Gulf Sturgeon that was finalized in September 2010 (Constant 2010).

**Response:** The Trustees examined the behavior of Gulf sturgeon, but not at the scale originally envisioned in the MS Canyon 252 Pre-Assessment Plan for the Collection of Data to Determine Potential Exposure and Injuries of Threatened Gulf Sturgeon. The telemetry data we collected defined the winter migratory pattern in the northern Gulf of Mexico (see Chapter 4, Section 4.6.7.1, Field Based Assessment; and Section 4.6.7.2, Pathways for Oil and Response Actions to Affect Gulf Sturgeon).

- 4-42 Comment:** The commenter had two distinct points relating to available literature supporting the basis and interpretation of the (supporting PDARP/PEIS) documents. The references of note include the U.S. Fish and Wildlife Service (USFWS) and NMFS Gulf Sturgeon 5-year status review (FWS & NMFS 2009) for its reviewed status, and Rudd et al. (2014) for drainage specific injury interpretation.

**Response:** The Trustees are aware of the FWS and NMFS (2009) Gulf Sturgeon 5-year status review and the population estimates therein. The Trustees used many of the population estimates therein, but attributed those estimates to the original publication that the 5-year status review cited. Additionally, the Trustees used more recent population numbers from unpublished reports to address the dated nature of some of the estimates in the 5-year review. In the case of Rudd et al. (2014), the Trustees are aware of these findings and they were considered, although inter-basin exchange and river-specific fidelity was outside the scope of the current injury assessment (see Section 4.6.7.1, Field Based Assessment; and Section 4.6.7.2, Pathways for Oil and Response Actions to Affect Gulf Sturgeon).

- 4-43 Comment:** The commenter inquired about the consideration of size- or age-based differences in marine residency times for Gulf sturgeon and what implications this may have on differential exposure and subsequent potential ontogenetic shifts over the course of the Gulf sturgeon life span.

**Response:** The Trustees appreciate the distinction in potential exposure suggested by the commenter between adult sturgeon that would be expected to overwinter in the Gulf compared to juveniles that may winter in the bays and be less likely to be exposed. The Trustees may evaluate this distinction as they monitor the success of the restoration of the injury to Gulf sturgeon. However, for purposes of the Gulf sturgeon exposure and injury determination, the Trustees note that Gulf sturgeon age distribution information is generally unavailable. Accordingly, the Trustees used available population data for the Gulf sturgeon river populations across the northern Gulf of Mexico without focusing on the age distribution demographics.

#### 8.3.4.5 Nearshore Marine Ecosystem Assessment

**4-44 Comment:** The commenter noted that with the investigation cited in the assessment, it was obvious that erosion of marsh was extensive and ongoing throughout the studies. The commenter asked whether, with the direct loss of marsh vegetation ongoing, the assessment accounts for future losses that will occur, particularly in Plaquemines Parish, and whether these losses are targeted for restoration.

**Response:** Assessment studies evaluated cumulative impacts from 2010 to 2013 but did not quantify the rate of loss per year. Thus, the assessment does not separately quantify future losses due to accelerated loss of marsh that was oiled. The assessment also did not quantify marsh erosion according to individual Parish boundaries. For those areas where erosion did occur due to oiling, the Trustees acknowledge that these areas are permanently lost and cannot recover without restoration. The emphasis on marsh restoration in the preferred alternative addresses past and future injuries to marsh (see Section 5.5.2).

**4-45 Comment:** The commenter recognized the importance of the nearshore ecosystem as a critical component in the health of not only nearshore environments, but the Gulf of Mexico as a whole. The commenter noted that this is an important observation and its emphasis is warranted. The commenter stated that although the nearshore environmental injury assessment was thorough, they had some concerns, especially the injury and impact to wetland habitat and the organisms that use them.

**Response:** The Trustees also recognize the importance of the nearshore ecosystem, as reflected by the fact that the majority of the proposed settlement funding is allocated to restoration of wetlands, coastal and nearshore habitats. The Trustees expressly addressed issues of uncertainty regarding the nature and extent of injuries to natural resources in Section 4.1.5.3 of the PDARP/PEIS, and noted that "[w]hile further study could somewhat decrease uncertainty, the Trustees do not expect that the degree of increased certainty would change their selection of the preferred alternative presented in Chapter 5 of this Draft PDARP/PEIS.

**4-46 Comment:** The commenter requested an explanation for how assessment of impacts accounted for discrepancies between 2008 and 2010 shoreline maps. The commenter expressed concern that in some regions, especially Louisiana, shoreline impacts were underestimated by up to 40 percent. Further, the commenter noted that most of the injury assessment documents miles of shoreline for injury assessment along the marsh edge and does not account for oil pushed back into low-lying marsh during high tides and fronts. The commenter is concerned that assessing

injury by linear miles instead of by area does not account for interior marsh oiling and underestimates damages, particularly in Louisiana.

**Response:** During the time of the assessment, the 2008 shoreline maps were the most current shoreline available and the shoreline used to document the most extensive shoreline oiling dataset, SCAT. Based on the evaluation, it is possible that shoreline length was underestimated in some areas. The Trustees' preferred comprehensive integrated ecosystem approach to restoration accommodates such uncertainties by allowing the Trustees to design and implement restoration projects that can benefit a broad array of resources and habitats. Further, estimates for shoreline miles oiled were used as a tool to estimate the overall extent of oiling and associated injuries. As described in the injury assessment, the Trustees have documented injury in interior marsh areas. As it is impractical and inefficient to restore marsh edge alone, restoration projects will by necessity involve projects that include deeper areas of marsh (back marsh) to function fully.

- 4-47 Comment:** The commenter was concerned about how damage to the vegetation was assessed, and noted that although the uptake of oil and oil byproducts was assessed for submerged aquatic vegetation (SAV), this same effect was not assessed for marsh vegetation. With oil exposed to the sun and other decomposers/weatherers of oil, it is likely that the oil that was deposited in the wetlands was broken down into smaller constituents that are present in the oil. Some of these constituents could be biologically available for plant uptake, affecting important plant processes such as photosynthesis, reproduction, growth, and vegetative expansion (asexual reproduction). The commenter noted that there is no indication if this was studied and no explanation of why it was studied in SAV and not wetland vegetation. The commenter asked if plant uptake of oil and byproducts was studied and no effect found; if there is evidence that wetland vegetation does not uptake oil, this should be stated clearly in the PDARP/PEIS. Plant uptake of oil and oil byproduct could be a long-term injury that affects many generations of plants, but was not accounted for.

**Response:** In the literature, the main drivers for vegetation health impacts are degree of plant stem oiling and oiling of belowground plant tissues. The coastal wetland vegetation assessment focused on these main drivers for effects. Uptake is typically not considered a cause for effects to plant health, although uptake could be considered an additional source of oil for plant consumers. The oiling occurred in summer 2010. Following senescence of vegetation in the fall, plant material decays and new plant growth occurs in the spring. It is unlikely that more oil would be taken into the plant during that new spring growth.

- 4-48 Comment:** The commenter noted that only damage and reduction to aboveground biomass was assessed, whereas belowground biomass was ignored. Reductions in belowground biomass can affect nutrient uptake, soil stabilization, oxygenation of soils, and vegetative expansion. The lack of consideration of reduction or effect to belowground biomass again leads to an underestimation of actual wetland injury and impacts from the DWH oil spill.

**Response:** Belowground biomass was evaluated. A significant difference in belowground biomass in oiled compared to unoiled sites was not detected. For more information about that

specific assessment, please see Hester and Willis (2011). This document can be found in the Administrative Record (<https://www.doi.gov/deepwaterhorizon/adminrecord>).

#### 8.3.4.6 Bird Assessment

**4-49 Comment:** In general, commenters stated that avian injury was underestimated. Commenters noted the distinction between quantified injury and those injuries not specifically quantified. Some commenters requested an increase in the estimated quantified injury or further description of the underestimate and unquantified injuries. Commenters also noted or inquired about a number of specific data interpretations and uses, particularly why some of these metrics were not specific in place or time. Additionally, commenters described interest in whether the papers by Haney et al. (2014a, 2014b) were considered in the avian injury assessment, whether these approaches could be applied to the existing data, and why the estimates published by Haney et al. were an order of magnitude higher in quantified injured bird numbers.

**Response:** As described in Section 4.7.2 (Approach to the Assessment), the Trustees employed several approaches to assess injury to birds. It was the goal of the Trustees to systematically quantify avian injury where sufficient data existed and methods were scientifically reasonable and appropriate. However, quantitative estimates were not possible in all cases, as more fully described in Section 4.7.5.4 (Unquantified Injury). Although the Trustees were not able to fully quantify these injuries in these cases, there was evidence that exposure and injury occurred.

For each of the assessment approaches, the best available information, based on several data collection efforts, was used to quantify bird injury where quantification was possible. Each effort focused on deriving the best-supported and most scientifically defensible conclusions possible. Accordingly, while the Trustees agree the estimates may be conservative in not being able to quantify all mortality, they reflect an approach driven by scientific integrity. However, instances of underestimation did exist under two separate scenarios: 1) where the available data indicated an input value, but the input might be biased to underestimate injury, and 2) where there was known or suspected injury but the Trustees were unable to collect sufficient data to support quantification. The Trustees provided a numerical injury estimate for all instances where sufficient data existed. As noted in Section 4.7.5.5, “The Trustees consider their estimate of injury to be scientifically reasonable but conservative (i.e., injuries were underestimated). Inherent bias and uncertainties like those described above resulted in underestimation of bird mortality caused by the DWH oil spill.”

As discussed in Section 4.7.5.4, likely injuries to certain categories of birds, where data were insufficient to quantify injury, were described in a qualitative manner. Although the Trustees did not develop estimates for certain categories where data were insufficient, evidence of injury was documented. As noted throughout the PDARP/PEIS, the Trustees used ecological principles to assess avian and other resource injuries. Based on these findings, the Trustees developed a corollary ecosystem-level restoration approach to ensure that appropriate restoration is identified and ultimately accomplished. Full compensation for both quantified and unquantified avian injury will be achieved through restoration projects specifically designed for birds along with restoration projects for non-avian resources that provide ecosystem services that will

benefit birds. Therefore, the PDARP/PEIS envisions restoration for both quantitatively and qualitatively assessed resources.

Independent assessments of avian injury resulting from the DWH oil spill have estimated potential injuries up to an order of magnitude higher in number than the Trustees' quantified injuries (Haney et al. 2014a, 2014b).

The Trustees considered these papers during the avian injury assessment, as is indicated in Section 4.7.2 of the PDARP/PEIS, including but not limited to:

Haney, J. Christopher, Harold J. Geiger, Jeffrey W. Short. 2014a. Bird mortality from the Deepwater Horizon oil spill. I. Exposure probability in the offshore Gulf of Mexico. *Marine Ecology Progress Series*. Vol. 513: 225-237.

Haney, J. Christopher, Harold J. Geiger, Jeffrey W. Short. 2014b. Bird mortality from the Deepwater Horizon oil spill. II. Carcass Sampling and Exposure Probability in the Coastal Gulf of Mexico. *Marine Ecology Progress Series*. Vol. 513: 239-252.

Haney et al. (2014a, 2014b) both reported estimates of avian mortality based on available information. When information was lacking, assumptions were made to produce estimates of avian mortality. Some assumptions made by Haney et al. were different from those made by the Trustees. Important differences in population estimates and dead bird replacement rates, for example, resulted in estimates that were markedly higher when compared to estimates made with incident-specific estimates of population abundance and carcass recovery data, as well as carcass persistence and searcher efficiency values. With the publication of the PDARP/PEIS, the Trustees have provided incident-specific data used in their estimation efforts that were not previously available at the time Haney et al. 2014a and 2014b were published. For example, in their 2014 studies Haney et al. applied the drift correction factor to all (100 percent) of the carcasses recovered. The Trustees' records indicated that a large number of birds died on land. Therefore, the drift correction factor was only applied to the proportion of birds (32 percent) that were estimated to have died on water, and thus, subject to being "lost at sea." This difference alone would lead to a difference in mortality estimates of over threefold.

While assumptions may have differed, the Trustees employed approaches and methods that were very similar to the methods used to estimate avian mortality in Haney et al. (2014a, 2014b). As described in the Trustees' report (IEc 2015a), both the Trustees and Haney et al. (2014) used methods previously employed for oil spill injury assessments.

- 4-50 Comment:** A commenter expressed interest in the Trustees further emphasizing that total mortality was in excess of avian mortality that was explicitly quantified, including the addition of more species. Additionally, they called for further clarification on injuries to birds in the marsh, islands colonies, and offshore, as well as requesting information on the evaluation of sublethal effects and the time period assessed for bird injuries. Finally, the commenter noted the potential influence of temporal differences in the data used to determine the drift correction factor.

**Response:****1. Marsh Birds**

Quantifying interior marsh injury proved particularly challenging, but the Trustees concluded that large numbers of key marsh bird species were potentially exposed to oil (Section 4.7.5.4.2). These key species are representative of dominant bird taxa that occur in coastal marshes in the northern Gulf of Mexico. Restoration of marsh habitat and projects designed for these key species specifically will provide benefits to additional marsh-dwelling bird species that may not have been specifically evaluated in the Trustees' marsh bird injury assessment (Conroy 2013). Full restoration for all quantified and unquantified avian injuries will be achieved through projects specifically designed to benefit marsh birds along with restoration projects for other injured resources (e.g., marsh habitats) that will provide service benefits to marsh birds. As noted throughout the PDARP/PEIS, the Trustees used sound ecological principles to assess avian and other resource injuries. Based on these findings, the Trustees developed a corollary ecosystem-level restoration approach to ensure that appropriate restoration is identified and ultimately accomplished.

**2. Colonies**

As noted in Section 4.7.5.4.1 (Island Waterbird Colonies), "Some mortality in Island Waterbird Colonies was included in Injury Quantification (see Section 4.7.5.1.1). However, the Trustees recognize that these estimates do not fully capture the total injury that occurred within colonies." Three of the approaches used by the Trustees captured some portion of the mortality associated with island waterbird colonies. Specifically, the Shoreline Deposition Model (SDM) used records of when and where the thousands of dead and oil-impaired birds were collected, and generated a mortality estimate that ranged from 38,900 to 58,400 for the period 20 April to 30 September 2010. A substantial portion of this mortality (13,296 to 19,955 dead birds) was associated with island waterbird colonies. In SDM regions that did not have sufficient data for inclusion in the SDM, mortality was estimated using carcass deposition rates for similar habitat type in adjacent SDM regions. Because the SDM captured some portion of island colony mortality, the mortality estimate for these unmodeled regions also accounted for some portion of the mortality occurring in island waterbird colonies. Also, some dead birds were collected during systematic surveys of island nesting colonies after the breeding season.

Although these potential injuries were not fully quantified, the proposed settlement will provide for the restoration of explicitly quantified and the qualitatively described avian injuries resulting from the DWH oil spill. As noted throughout the PDARP/PEIS, the Trustees used sound ecological principles to assess avian and other resource injuries. Based on these findings, the Trustees developed a corollary ecosystem-level restoration approach to ensure that appropriate restoration is identified and ultimately accomplished.

**3. Carcass Drift**

The Trustees recognize that environmental conditions that could affect deposition of carcasses on shorelines may have varied between the year in which the spill occurred and the following year. However, general seasonal weather and ocean current patterns in the Gulf of Mexico are relatively consistent among years. In the absence of the ability to recreate 2010 weather and

oceanic conditions, conducting the drift study in the following year during the season in which the spill occurred was a reasonable alternative to estimate carcass beaching probability, and preferable to, for example, relying on literature-based estimates with no relation to the Gulf of Mexico.

The effects of transmitter floats contributing to the beaching of bird carcasses were appropriately considered. As noted in the Technical Memorandum entitled Estimating the Probability of a Bird Being Lost at Sea, “a key component in evaluating the data involved ensuring that the carcasses that made it to shore were not assisted by the transmitter flotation device (i.e., that the carcasses would have made it to shore without the help of the transmitter). This required a substantial review of the photographs, field datasheets, and field sightings to evaluate the degree of decomposition and determine whether each individual carcass made it to the shoreline or was ‘lost at sea.’ For the purposes of this analysis, ‘lost at sea’ refers to any carcass that did not reach shoreline or would not have reached shoreline without the transmitter flotation device (e.g., sank, eaten by a predator).” This memorandum has been posted to the Administrative Record.

The Trustees recognize that some proportion of birds died in the water at varying distances from land and some proportion of the birds died on land. To appropriately estimate injury, the carcass drift correction factor should only be applied to those birds that died in the water. In the absence of more definitive data, the Trustees used live bird recovery records as a proxy to estimate the proportion of birds that died on the water and, subsequently, the proportion of birds to which the carcass drift (a.k.a. “lost at sea”) correction factor was applied.

#### 4. Time period for data or measured injury

The Trustees agree that the spill and resulting ecological effects likely contributed to continuing injury to birds after the time period for which avian injury was estimated. However, with the passage of time, the ability to conclusively link injury with the oil spill becomes more challenging. Working with subject-matter experts and relying on the existing literature, the Trustees determined the appropriate time periods for estimating mortality, using an approach driven by scientific integrity. For example, the Trustees estimated bird injury based on the degree of external oiling of feathers. Field surveys to document bird oiling were conducted through March 2011. Mortality estimates were then based on the probability of mortality occurring within 1 year of the documented exposure as determined by Trustee experts. Please refer to Dobbs et al. (2015) in the Administrative Record for a more detailed discussion of survival probability of birds exposed to oil.

#### 5. Sublethal (avian toxicity)

The Trustees evaluated sublethal effects of oil in both field collected birds and birds dosed with MC-252 oil in controlled laboratory studies. These effects are summarized in Section 4.3.3.4 (Toxicity of DWH Oil to Birds) and are discussed in greater detail in referenced technical reports that are available in the Administrative Record.

#### 6. Pelagics

The Trustees agree that the mortality estimate for offshore birds is largely dependent on bird

abundance and the exposure-related distribution of oil. There are a number of sources of variation, both temporally and spatially, that are inherent in these environmental conditions considered by the Trustees in coordination with our resource injury experts. Considering the highly variable bird abundance and oil distribution conditions, the Trustees chose to use the data for July and August 2010 as the most complete and continuous datasets to represent the injury to offshore birds.

As described in our Technical Memo (IEc 2015b): “We used a two month time period because 1) July and August surveys contain the data closest to when oil was continuously released into the nGOM, 2) using data from these two months increased the number of usable surveys and provided more data to better estimate average density, and 3) limiting the data to these two months reduced seasonal fluctuations in bird species and numbers within the area of interest by excluding surveys conducted in later months. Haney (2011) identified that in addition to water depth, densities of seabirds birds also differ by season which supports our approach to limiting transect data to only the months of July and August.” In addition,

“We used the daily July extent of oil and determined the overall July average daily oil extent 1) beyond the 40 km boundary of the nGOM coast as described previously but on water less than or equal to 200 m deep and 2) on water greater than 200 m deep. We selected July oiling data since it was similar to the time period when seabird surveys were conducted.”

**4-51 Comment:** The commenters inquired about the conservative approach taken by the Trustees in the quantitative avian injury quantification and how that will relate to restoration and the Trustees’ responsibilities under OPA.

**Response:** Although all potential avian injuries were not fully quantified, the work anticipated in the PDARP/PEIS will provide for the restoration of explicitly quantified avian injury, as well as the qualitatively described avian injury, such as birds within interior marshes or within delicate nesting rookeries, or which is sublethal or behavioral. As noted throughout the PDARP/PEIS, the Trustees used sound ecological principles to assess injury to avian and other resources. Based on these findings, the Trustees developed a corollary ecosystem-level restoration approach to ensure that appropriate restoration is identified and ultimately accomplished. The Trustees determined that the amount allocated to birds for both quantitatively and qualitatively described injuries is appropriate compensation. Moreover, an integral part of the Trustees’ restoration approach will be monitoring and adaptive management, including collecting data points beyond simply bird counts.

Additionally, the ecosystem approach proposed in the PDARP/PEIS will provide for bird restoration benefits beyond the allocation to compensate the public for bird injury alone. Restoration Types, goals, and approaches not specifically designed for bird restoration are expected to provide many ecosystem services that will substantially benefit avian resources. For example, the goals of restore and conserve habitat and replenish and protect living coastal and marine resources can work both independently and together to achieve necessary benefits to injured birds and services to birds (Section 5.3.1). Similarly, restoration projects implemented under the habitat projects on federally managed lands (Section 5.5.3), and wetlands, coastal,

and nearshore habitats (Section 5.5.2) will provide tremendous additional enhancement to bird resources in target areas by providing, for example, nesting habitat that may otherwise be limiting, and improved marsh bird community functioning through barrier island creation and enhanced marsh protection. This comprehensive ecosystem restoration effort which integrates bird-specific restoration actions into broader restoration planning, and the resulting collateral benefits realized across all injured resource categories, will restore injuries to birds resulting from the spill.

**4-52 Comment:** The commenter noted that the finalization of models involves the consideration of as many influential variables as possible, as well as the vetting of the models through sensitivity and uncertainty analyses to more thoroughly appreciate the range of potential quantifiable injury and the power of the input variables. The commenter also sought to better understand the ranges of quantified injuries and how those relate to statistical confidence.

**Response:** The comment speaks to importance of sensitivity, uncertainty, and power analyses in the vetting of injury estimation models. These are valuable tools used to better understand the subtleties and nuances of models, but they do not change the central tendency (average) of the estimates. Rather, these analyses show how sensitive the models are to different input variables so that one can fully appreciate the influence of each variable, and therefore can help to describe the central tendency of the model. The central tendency of the models used by the Trustees would not be meaningfully changed by the sensitivity, uncertainty, or power analyses noted here, although generation of confidence intervals would be supported.

### 8.3.4.7 Sea Turtle Assessment

**4-53 Comment:** The commenter requested that the Trustees apply production forgone modeling to sea turtles for which growth and survival have been estimated and modeled as they did in their fish injury assessment. This would supplement the other approaches that were applied to sea turtles. The commenter stated that Rowe et al. (2007) noted that forgone production modeling is not a direct method of increasing sea turtle production. Therefore, scaling was performed to estimate the number of hatchlings needed to compensate for the sea turtle injuries. The commenter stated this is especially relevant because increasing annual hatchling production on nesting beaches in Tamaulipas and Veracruz, Mexico, as well as in Texas, is the most immediate restoration action that can be taken to restore exponential growth toward recovery of the Kemp's ridley population (see Caillouet Jr. 2015) ([http://www.galvnews.com/opinion/guest\\_columns/article\\_68a51fea-6186-11e5-82f1-03855703a74a.html](http://www.galvnews.com/opinion/guest_columns/article_68a51fea-6186-11e5-82f1-03855703a74a.html)). The commenter said that restoration and enhancement of annual hatchling production and releases from nesting beaches have long been demonstrated as effective means of restoring sea turtle population growth, especially for Kemp's ridley.

**Response:** In the injury quantification, the Trustees quantified production forgone for one component of sea turtle injury: the number of lost Kemp's ridley hatchlings was estimated based on the number of adults and subadults killed in 2010 that would have contributed to the Kemp's ridley nesting female population between 2011 and 2014. In addition, the Trustees quantified unrealized loggerhead nesting due to response injuries on beaches in Alabama and Florida. As for restoration, the portfolio of proposed restoration approaches to address sea

turtle injuries includes options focused on restoration of nesting beach habitats and nest protection (see sea turtle restoration approaches in Section 5.5.10). Furthermore, restoration projects focused on Kemp's ridley nesting beaches in Texas and Mexico are being implemented under Early Restoration (Appendix 5.B).

- 4-54 Comment:** The commenter requests that the Trustees add in and discuss the relevance of and presentation to the damage assessment and restoration of Gulf of Mexico sea turtle populations a number of specific scientific papers (as listed by the commenter).

**Response:** After comparing this list of references with those in the Administrative Record (i.e., references in the PDARP/PEIS and/or technical reports), the Trustees conclude that the suggested references fall into one of three categories: 1) the suggested reference is already cited either in the PDARP/PEIS or in technical reports, or both; 2) the suggested reference is not cited in the PDARP/PEIS or technical reports, but similar citations are already used to support statements made in the assessment documentation, so additional citations are unnecessary, and; 3) there are no relevant statements in the assessment documentation to justify inserting a suggested reference. Therefore, while the Trustees thank the commenter for the references, they will not be added to the PDARP/PEIS.

- 4-55 Comment:** The commenter requested that the PDARP/PEIS include a discussion of various hypotheses put forward to explain the 2010 drop in Kemp's ridley turtle nest abundance throughout the western Gulf of Mexico, as it is likely that the oil contributed to some extent to the observed reduction in projected nesting after 2010.

**Response:** The estimated decrease in Kemp's ridley nest abundance since 2010 relative to projected abundance based on pre-2009 trends is certainly a critical concern and a focus of analysis and management efforts. Accordingly, in Sections 4.8.4.7 and 4.8.5.4.7, the Trustees described the information available to quantify the contribution of the DWH oil spill to the estimated deviation between observed and projected Kemp's nest abundance between 2010 and 2014. For example, the Trustees estimated the number of adult females and subadult females killed by DWH during 2010 that might have become breeding adults after 2010 (see Section 4.8.4.7 and Section 4.8.5.4.7), and stated that the loss of these animals would have affected the Kemp's ridley nesting trajectory after 2010. The Trustees also estimated the number of lost hatchlings associated with the loss of these nesting females (Section 4.8.5.4.7). In addition, the Trustees acknowledged that unquantified direct and indirect effects of oil exposure (e.g., ingestion during feeding while submerged, contamination of critical habitats) might have contributed to an additional component of lost or impaired breeding Kemp's ridleys. The Trustees also acknowledged that these effects would have applied to other sea turtle species as well. As stated in the PDARP/PEIS, "the actual nature and magnitude of the DWH effect on reduced Kemp's ridley nesting abundance and associated hatchling production after 2010 requires further evaluation." Ultimately, the purpose of the DWH NRDA was not to evaluate all potential causes and their relative contributions to the estimated decrease in Kemp's nest abundance since 2010; instead, the DWH NRDA presented quantification of exposures and injuries to Kemp's ridleys caused by the DWH oil spill based on data available to the Trustees for the NRDA.

**4-56 Comment:** The commenter had several requests to modify the figure and legend of Figure 4.8-10. Specifically the commenter requested that the DWH oil spill footprint and the 50 m depth contour should be added, that the legend of the figure state that Trustees flew aerial surveys to document locations of sea turtles within the DWH oil spill footprint, that triangles indicate all sightings of Kemp's ridleys (blue; n=287 turtles) and loggerheads (orange; n=529 turtles) along all survey transect lines flown systematically from April through September 2010, and that the DWH oil spill footprint should be added to the figure.

**Response:** The turtle sightings data relative to the DWH footprint appear in another figure (4.8-19). Adding the 50 m contour to Figure 4.8-10 is unnecessary because: 1) data from all sea turtles are shown, not just Kemp's ridleys, and 2) some Kemp's were sighted beyond the 50 m contour.

**4-57 Comment:** The commenter noted that the Kemp's ridleys in mentioned in studies in Section 4.8.4.3 were those that were examined after being found in the areas surveyed. These studies did not rule out the probability that significant numbers of large subadult and adult females were killed or debilitated by DWH oil during their migration toward western Gulf of Mexico nesting beaches in 2010, or prevented or delayed from migrating by DWH oil. The commenter stated that energy stores are required for their migration to nesting beaches and production of eggs. And, if the turtles were undernourished due to reduction of abundance of prey by the DWH oil spill, they may not have been able to migrate, produce eggs, or both. The commenter requested that the Trustees examine and discuss the specific list of documents provided by the commenter in a revision of Draft Section 4.8. The commenter stated that those sources provide numerous hypotheses regarding factors that could have contributed to the setback in the Kemp's ridley female population, including the DWH oil spill and responses to it. The commenter stated that these setbacks were evidenced by the substantial drops in nests on beaches in Tamaulipas, Veracruz, and Texas in 2010, which appears to have had lasting effects on nesting. In addition, the commenter requests that the Trustees discuss a control group of 18 adult Kemp's ridleys that exists at Cayman Turtle Farm, Inc., Grand Cayman Island, BWI, from which carapacial scute samples can be taken for analysis of chemical markers, and comparison with those mentioned above.

**Response:** The Trustees discussed the potential contributions of sublethal or indirect effects of oil exposure on sea turtles (Section 4.8.4.7 and Section 4.8.5.4.7). The estimated decrease in Kemp's nest abundance since 2010 relative to projected abundance based on pre-2009 trends is certainly a critical concern and a focus of analysis and management efforts. Accordingly, in Sections 4.8.4.7 and 4.8.5.4.7, the Trustees described the information available to quantify the contribution of DWH to the estimated deviation between observed and projected Kemp's nest abundance between 2010 and 2014. For example, the Trustees estimated the number of adult females and subadult females killed by DWH during 2010 that might have become breeding adults after 2010 (see Section 4.8.4.7 and Section 4.8.5.4.7), and stated that the loss of these animals would have affected the Kemp's ridley nesting trajectory after 2010. The Trustees also estimated the number of lost hatchlings associated with the loss of these nesting females (Section 4.8.5.4.7). In addition, the Trustees acknowledged that unquantified direct and indirect

effects of oil exposure (e.g., ingestion during feeding while submerged, contamination of critical habitats) might have contributed to an additional component of lost or impaired breeding Kemp's ridleys. The Trustees also acknowledged that these effects would have applied to other sea turtle species as well. As stated in the PDARP/PEIS, "the actual nature and magnitude of the DWH effect on reduced Kemp's ridley nesting abundance and associated hatchling production after 2010 requires further evaluation." Ultimately, the purpose of the DWH NRDA was not to evaluate all potential causes and their relative contributions to the estimated decrease in Kemp's nest abundance since 2010; instead, the DWH NRDA presented quantification of exposures and injuries to Kemp's ridleys caused by the DWH oil spill based on data available to the Trustees for the NRDA.

- 4-58 Comment:** The commenter noted that the winter of 2009–2010 was cold and wet (NCDC 2010) (<http://www.ncdc.noaa.gov/extremeevents/specialreports/2009-2010-Cold-Season.pdf> <https://sites.google.com/site/whythe2009winterissocold/>), and the deliberate releases of river water mentioned in Section 4.6.3.2.2, as well as colder Mississippi River water outflow (Huang et al. 2015) (<http://onlinelibrary.wiley.com/doi/10.1002/2014JC010498/full>), may have delayed migration of large subadult and adult female Kemp's ridley from the northern Gulf of Mexico in 2010, thereby allowing them to be impacted by DWH oil (Caillouet Jr. 2010, 2011, 2014; Gallaway et al. 2013; Gallaway & Gazey 2014; Gallaway et al. in press; Gallaway et al. 2014). The commenter requested that this be discussed in a revision of the Draft.

**Response:** The estimated decrease in Kemp's ridley nest abundance since 2010 relative to projected abundance based on pre-2009 trends is certainly a critical concern and a focus of analysis and management efforts. Accordingly, in Sections 4.8.4.7 and 4.8.5.4.7, the Trustees described the information available to quantify the contribution of the DWH oil spill to the estimated deviation between observed and projected Kemp's ridley nest abundance between 2010 and 2014. For example, the Trustees estimated the number of adult females and subadult females that might have become breeding adults after 2010 that were killed by the DWH oil spill during 2010 (Section 4.8.4.7 and 4.8.5.4.7), and stated that the loss of these animals would have affected the Kemp's ridley nesting trajectory after 2010. The Trustees also estimated the number of lost hatchlings associated with the loss of these nesting females (Section 4.8.5.4.7). In addition, the Trustees acknowledged that unquantified direct and indirect effects of oil exposure (e.g., ingestion during feeding while submerged, contamination of critical habitats) might have contributed to an additional component of lost or impaired breeding Kemp's ridleys. The Trustees also acknowledged that these effects would have applied to other sea turtle species as well. As stated in the Draft PDARP/PEIS, "the actual nature and magnitude of the DWH effect on reduced Kemp's ridley nesting abundance and associated hatchling production after 2010 requires further evaluation." Ultimately, the purpose of the DWH NRDA was not to evaluate all potential causes and their relative contributions to the estimated decrease in Kemp's ridley nest abundance since 2010; instead, the DWH NRDA presented quantification of exposures and injuries to Kemp's ridleys caused by the DWH oil spill based on data available to the Trustees for the NRDA.

**4-59 Comment:** The commenter requested that Section 4.8.3.3.2 should clarify exactly what was meant by response operations and translocation of nests during the DWH oil spill—whether it referred specifically to response operations relating to sea turtles, or translocation of nests related to Kemp’s ridley turtles, or translocation of clutches of sea turtle clutches from west Florida to east Florida nesting beaches during the oil spill. Further, the commenter stated that translocation of sea turtle clutches from west Florida to east Florida beaches during the DWH oil spill should not be given as a reason that very little sampling was done during the actual nesting season in 2010. The commenter stated that the fact that very little sampling was done during the actual nesting season in 2010, especially that of Kemp’s ridley, could well be the major reason why data are lacking concerning impacts on large subadult and adult Kemp’s ridley on the northern Gulf of Mexico foraging grounds. Since shrimp trawling has been designated the most important anthropogenic cause of mortality in neritic life stages of sea turtles at sea since 1990 (NRC 1990) (<http://www.nap.edu/catalog/1536/decline-of-the-sea-turtles-causes-and-prevention>), it would have been prudent to sample northern Gulf of Mexico foraging areas for large subadult and adult Kemp’s ridley sea turtles with bottom trawls during the nesting season in 2010.

Further, the commenter inquired whether in 2010, there were strandings of large subadult and adult Kemp’s ridley turtles documented along the northern Gulf of Mexico coast (Florida through Texas) before, during, and following the DWH oil spill. The commenter requested that the Trustees include a summary of annual numbers of strandings of large subadult and adult female and male Kemp’s ridleys in each year 2009 to 2014, and compared to strandings of smaller, neritic life stages of Kemp’s ridleys. The commenter recommended that for 2010 only, these strandings should be grouped into two temporal categories, pre-spill and from the beginning of the spill onward. Comparisons should also be made of carapace length distributions of the annual strandings of all neritic stage Kemp’s ridley turtles, for years 2009 to 2014, with 2010 partitioned into the two categories above. This should determine the proportion of strandings made up of large subadults and adults (by sex) in each year 2009 to 2014, and evaluate how this proportion may have changed over years 2009 to 2015. It should also determine whether the proportion changed between pre-spill and from beginning of the spill onward in 2010. Methods and results of these analyses should be included in a revision of the Draft.

**Response:** Translocation of sea turtle eggs from the Gulf of Mexico to the Atlantic side of Florida as a DWH response action is well defined in the PDARP/PEIS (see Sections 4.8.4.6 and 4.8.5.2.2). The management action of translocating Kemp’s ridley nests on beaches in the western Gulf of Mexico is not related to the DWH NRDA injury assessment, and thus is never mentioned in the PDARP/PEIS (with the exception of restoration approaches related to this practice). Thus, there should be no confusion of these two distinct types of translocation in the PDARP/PEIS injury assessment context. The estimated decrease in Kemp’s ridley nest abundance since 2010 relative to projected abundance based on pre-2009 trends is certainly a critical concern and a focus of analysis and management efforts. Accordingly, in Sections 4.8.4.7 and 4.8.5.4.7, the Trustees described the information available to quantify the contribution of the DWH oil spill to the estimated deviation between observed and projected Kemp’s nest abundance between

2010 and 2014. For example, the Trustees estimated the number of adult females and subadult females killed by DWH during 2010 that might have become breeding adults after 2010 (see Section 4.8.5.4.7 and Section 4.8.5.4.7), and stated that the loss of these animals would have affected the Kemp's ridley nesting trajectory after 2010. The Trustees also estimated the number of lost hatchlings associated with the loss of these nesting females (Section 4.8.5.4.7). In addition, the Trustees acknowledged that unquantified direct and indirect effects of oil exposure (e.g., ingestion during feeding while submerged, contamination of critical habitats) might have contributed to an additional component of lost or impaired breeding Kemp's ridleys. The Trustees also acknowledged that these effects would have applied to other sea turtle species as well. As stated in the PDARP/PEIS, "the actual nature and magnitude of the DWH effect on reduced Kemp's ridley nesting abundance and associated hatchling production after 2010 requires further evaluation." Ultimately, the purpose of the DWH NRDA was not to evaluate all potential causes and their relative contributions to the estimated decrease in Kemp's ridley nest abundance since 2010; instead, the DWH NRDA presented quantification of exposures and injuries to Kemp's ridleys caused by the DWH oil spill based on data available to the Trustees for the NRDA. Sea turtle strandings were extensively documented, and post-mortem analyses were performed on more than 1,000 animals since 2010 (Stacy 2012, 2015; Stacy & Schroeder 2014). The Trustees described these efforts and the summarized findings in Section 4.8.3 in the context of evidence of oil exposure on stranded turtles; associated technical reports are available in the Administrative Record. Because so few stranded turtles showed evidence of external oiling, and because the vast majority of turtle injuries occurred away from shore, from where very few strandings could have occurred, the Trustees concluded that strandings on beaches were a poor indicator of oil-caused mortality of sea turtles (see Section 4.8.5.4.4). Using strandings to determine the size and age class distribution of a sample of dead turtles from the overall populations was beyond the scope of the DWH NRDA.

**4-60 Comment:** The commenter requested that Lutz and Lutcavage (1989) be cited and mentioned in the damage assessment.

**Response:** The Trustees considered Lutz and Lutcavage (1989), but the conference abstract appears to have presented preliminary results that were later completed and published as Lutcavage et al. (1995), which is cited in the PDARP/PEIS and technical reports.

**4-61 Comment:** The commenter stated that the injury assessment results for the female portion of the Kemp's ridley (*Lepidochelys kempii*) population are woefully inadequate for purposes of informing this species restoration planning so that restoration can address the nature, degree, and extent of the injuries. The commenter noted that according to the Gulf Coast Vulnerability Assessment conducted by USFWS (Watson et al. 2015), of the species assessed, Kemp's ridley sea turtle is thought to be the most vulnerable species across the Gulf Coast. Experts identified its main threat as loss of nesting habitat to sea level rise, erosion, and urbanization. This implies that Kemp's ridley is considered to be a highly important index species for detecting environmental impacts and trends. In addition, its nesting beaches are habitats that are important to its survival and recovery, because they are annual sources of hatchling releases (i.e., additions to the population). The commenter requested that the Trustees address this in a

revision of the PDARP/PEIS. Additionally, the commenter noted that in Section 4.8, Executive Summary, Gulf of Mexico sea turtle species were combined to present numbers of large juvenile and adults killed by the DWH oil spill, as well as to present numbers of hatchlings injured by the DWH oil spill. The commenter stated that all Gulf of Mexico sea turtle species, life stages, and sexes would not be expected to have been impacted in identical ways by the 2010 DWH oil spill (see Caillouet Jr. 2014). The commenter stated that only adult female sea turtles lay clutches of eggs (i.e., nests). Before the oil spill, growth in the female Kemp's ridley population, especially exponential growth, provided strong evidence that additions to the population through annual hatchling releases over the years had overwhelmed all losses due to anthropogenic and natural mortality for 2.5 decades (see Caillouet Jr. 2010). NMFS predicted that Kemp's ridley would meet downlisting criteria by 2011. The commenter requested that the Trustees discuss this in the revisions to the PDARP/PEIS.

**Response:** The reviewer is correct that different life stages and species were affected differently by the DWH spill; for that reason, the Trustees assessed the life stages and species separately. The reviewer is also correct about the importance of nesting beach conservation work to the recovery of sea turtles, including Kemp's ridley populations, and that sea turtles, especially Kemp's ridleys, are threatened by multiple stressors. The Trustees considered these facts when developing the portfolio of proposed restoration approaches to address sea turtle injuries in their marine and terrestrial habitats. Proposed restoration approaches were generally developed to focus on the primary threats to sea turtle populations in the northern Gulf of Mexico, and restoration approaches include options focused on restoration of nesting beach habitats and nest protection (see sea turtle restoration approaches in Section 5.5.10).

Furthermore, restoration projects focused on Kemp's ridley nesting beaches in Texas and Mexico are being implemented under Early Restoration (Appendix 5.B). Finally, as the reviewer rightly emphasizes, the trend in Kemp's ridley nest abundance since 2010 relative to projected nest abundance based on pre-2009 trends is a concern and a focus of analysis and management efforts. The Trustees estimated the number of adult females and subadult females killed by DWH during 2010 that might otherwise have become breeding adults after 2010 (see Sections 4.8.4.7 and 4.8.5.4.7), and stated that the loss of these animals would have affected the Kemp's ridley nesting trajectory after 2010. The Trustees also estimated the number of lost hatchlings associated with the loss of these nesting females (see Section 4.8.5.4.7).

In addition, the Trustees acknowledged that unquantified direct and indirect effects of oil exposure (e.g., ingestion during feeding while submerged, contamination of critical habitats) might have contributed to an additional component of lost or impaired breeding Kemp's ridleys. The Trustees also acknowledged that these effects would have applied to other sea turtle species as well. As stated in the PDARP/PEIS, the actual nature and magnitude of the DWH effect on reduced Kemp's ridley nesting abundance and associated hatchling production after 2010 requires further evaluation. Ultimately, the purpose of the DWH NRDA was not to evaluate all potential causes and their relative contributions to Kemp's nest abundance since 2010; instead, the DWH NRDA presented quantification of exposures and injuries to Kemp's ridley turtles

caused by the DWH oil spill based on data available to the Trustees for the NRDA (see Section 4.8.5.4.7).

- 4-62 Comment:** The commenter noted that in retrospect, bottom trawling with shrimp trawls would have been an effective method for sampling abundance of neritic life stages of sea turtles that spend most of their time submerged, and especially for sampling abundance of large subadult and adult females that have the highest reproductive value compared to all other life stages. The commenter noted that this was a missed opportunity as it could have provided valuable data on abundance of large subadult and adult female sea turtles, especially Kemp's ridleys, during and following the oil spill. The commenter noted that this was a possible reason why large subadult and adult female sea turtles failed to be detected within areas inside and outside (to the west and east) the expanding spill footprint. Not only could the oil spill have killed large subadult and adult Kemp's ridleys, but it could have been a barrier to migration of these turtles to western Gulf of Mexico nesting beaches. The cold winter of 2009–2010 could have delayed their migration to the nesting beaches; the nesting season in 2010 was delayed. The commenter requested that this be discussed in the PDARP/PEIS.

**Response:** The Trustees were able to estimate the presence and potential exposures of neritic stage (i.e., large juveniles and adults) Kemp's (and loggerheads) on the continental shelf during and following the spill using conventional scientific survey and estimation techniques, such as aerial surveys and distance sampling to estimate density and abundance. These estimates informed exposure and injury quantification for sea turtles in this life stage. The estimated decrease in Kemp's nest abundance since 2010 relative to projected abundance based on pre-2009 trends is certainly a critical concern and a focus of analysis and management efforts. Accordingly, in Sections 4.8.4.7 and 4.8.5.4.7, the Trustees described the information available to quantify the contribution of the DWH oil spill to the estimated deviation between observed and projected Kemp's ridley nest abundance between 2010 and 2014. For example, the Trustees estimated the number of adult females and subadult females killed by DWH during 2010 that might have become breeding adults after 2010 (see Section 4.8.4.7 and Section 4.8.5.4.7), and stated that the loss of these animals would have affected the Kemp's ridley nesting trajectory after 2010. The Trustees also estimated the number of lost hatchlings associated with the loss of these nesting females (Section 4.8.5.4.7). In addition, the Trustees acknowledged that unquantified direct and indirect effects of oil exposure (e.g., ingestion during feeding while submerged, contamination of critical habitats) might have contributed to an additional component of lost or impaired breeding Kemps.

- 4-63 Comment:** The commenter commended the Trustees for recognizing the need for an integrated portfolio of approaches for the recovery and restoration of wildlife that emphasizes the benefits that restoring coastal and nearshore habitats would have for many of the affected species in the northern Gulf of Mexico.

**Response:** The Trustees acknowledge and appreciate the comment.

### 8.3.4.8 Marine Mammal Assessment

**4-64 Comment:** Several commenters asked how the Trustees evaluated the value of whales and dolphins.

**Response:** Rather than attempt to assign a dollar value to lost resources, the Trustees 1) quantified injury by using metrics that best characterized injuries to each specific resource and 2) recommended approaches to best restore Gulf resources. The recommended comprehensive integrated ecosystem restoration plan then looks at the Gulf resources holistically, with the goal of improving and maintaining healthy marine habitats and resources (including marine mammals), increasing the public access to these resources, and enhancing the quality of these recreational activities.

**4-65 Comment:** The commenter asked how Trustees can state that the dolphin and whale populations living offshore were generally less affected than bay, sound, and estuary dolphins, and asked how the data were evaluated.

**Response:** The statement regarding effects to offshore populations versus bay, sound, and estuary populations refers to the effect to the population or stock as a whole, and not effects to individuals. The Trustees assert that offshore animals that were exposed to oil were affected at similar levels as onshore animals exposed to oil. However, the effect to the population may differ depending on the size, range, fecundity, population level, and geographic range of the population being assessed. The Trustees clarified the language in the PDARP/PEIS (Section 4.9.5).

**4-66 Comment:** The commenter noted that the restoration plan does not offer a concrete direction to restore marine mammal populations, but instead points out various issues and potential threats. Some of these are based on untested assumptions, which need to be proven through a variety of studies. For example, the commenter noted that the draft suggests losses of 50 to 60 percent to the dolphin population in the Mississippi Sound and Barataria Bay in recent years and also suggests that the recovery of the species could take 50 to 60 years. The commenter stated that these figures are not based on actual data, and that the commenter believes more study needs to be done to establish such facts. The commenter stated that greater emphasis should be placed on really understanding dolphins in the northern Gulf of Mexico, including continually updating density, survival, and immigration/emigration estimates, quantifying seasonal movements, estimating resident/transient ratios, examining the effects of water quality, and conducting health assessments.

**Response:** The estimates of the magnitude of the marine mammal losses and years to recovery are not “unproven assumptions,” but rather estimates based on expert interpretation of a variety of data on mortality, reproductive failure, and adverse health effects coupled with population models (see Section 4.9.5 and Figure 4.9-17 of the PDARP/PEIS). While the Trustees agree that collecting additional updated information on dolphins would be useful, they believe that the information that they have developed under the NRDA is adequate to describe the level of injury and restoration needed for marine mammals. Given the scope and magnitude of restoration remaining to be conducted, the Trustees developed the PDARP/PEIS to clearly set

before the public a nested framework of programmatic goals, Restoration Types, and restoration approaches that will guide and direct the subsequent phases of restoration. Those subsequent phases of restoration will identify, evaluate, and select specific restoration projects for implementation that are consistent with the restoration framework laid out by the Final PDARP/PEIS. To most effectively address the extent of injury to marine mammals across the diverse geographic range they occupy, a combination of several approaches will need to be implemented to provide a portfolio of restoration approaches that collectively will allow populations to recover more quickly or reduce further harm from acute and chronic injuries caused by the DWH incident. This restoration portfolio includes restoration approaches designed to decrease and mitigate interactions with commercial and recreational fishing gear, characterize and reduce impacts from noise, reduce harm from industrial activities, reduce illegal feeding and harassment, and increase understanding of causes of marine mammal illness and death. Thus, the portfolio will enable early detection of and intervention in anthropogenic and natural threats, such as disease outbreaks or harmful algal blooms. The restoration portfolio for marine mammals will also include robust monitoring and scientific support for an adaptive management approach to restoration planning and implementation. Adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. A strong emphasis on data collection and monitoring for marine mammals will inform the public and Trustees on the state of the resource and iteratively drive restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident. For additional information on the marine mammal Restoration Type, please refer to Section 5.5.11.

- 4-67 Comment:** The commenter asked how the numbers of pelagic and offshore dolphins and whale mortalities and sublethal injuries were estimated, given that these animals did not strand and that they also have lung disease, adrenal disease, and poor body condition from the exposure to DWH oil.

**Response:** The assessment in the PDARP/PEIS includes the determination of injuries to offshore animals, which considers the adverse health effects seen in animals from the bays, sounds, and estuaries, calculated based on exposure to oil in the offshore environment. For more information about this aspect of the assessment, see Section 4.9.5 of the PDARP/PEIS.

- 4-68 Comment:** The commenter noted the insufficiency of assessment of the sperm whales, dolphins, and baleen whales. The commenter does, however, recognize the admirable attempt to comprehensively assess the damage, and the need to move forward with restoration after 5 years, and not to wait 20 years more for a complete assessment.

**Response:** The recommended comprehensive integrated ecosystem restoration plan looks at the Gulf resources holistically, with the goal to replenish and protect living coastal and marine resources using a variety of overlapping projects. These resources, including sperm whales and marine mammals, make up an interconnected Gulf ecosystem and food web. Thus, sperm whales and all marine mammals will benefit not only from projects explicitly designed to restore marine mammals, but also other projects that replenish and protect Gulf resources.

**4-69 Comment:** The commenters stated that the Trustees did not assess the value of the feeding ground of sperm whales, and that their population is globally significant, and therefore the loss of a male from the DWH is much bigger than just the loss to the Gulf.

**Response:** The Trustees present their determinations of injuries to the offshore marine resources, which includes sperm whale feeding habitats, in the Benthic Resources and Water Column Resources sections (e.g., see Figure 4.4-4 and Section 4.4.6.1). The recommended comprehensive integrated ecosystem restoration plan looks at the Gulf resources holistically, with the goal to replenish and protect living coastal and marine resources using a variety of overlapping projects. These resources, including sperm whales and marine mammals, make up an interconnected Gulf ecosystem and food web. Thus, sperm whales (and all marine mammals) will benefit not only from projects explicitly designed to restore marine mammals, but also from other projects that replenish and protect Gulf resources.

#### 8.3.4.9 Lost Recreational Use Assessment

**4-70 Comment:** The commenter noted that one of the biggest damages to people on the Mississippi Coast is that since the BP oil spill, residents along the Mississippi Coast can no longer go in the water. The commenter stated that they are afraid that the oil, in combination with the dispersants and bacteria and the other toxins, is going to make them very ill and/or they might lose a limb as a result of flesh-eating disease—which, the commenter stated, has happened. The commenter stated that most residents of the Coast will not even wade in the water, and that this is an example of an ecosystem service that the damaged resources give to the people along the Coast that has not been incorporated in the damage assessment.

**Response:** While human health impacts and issues of public safety are beyond the scope of the natural resource and damage assessment under OPA, the Trustees objectively evaluated the change in recreational use across the Gulf as a result of the spill in the assessment of Lost Recreation Use (Section 4.10). Any decline in use, whether it be boating, fishing, or general shoreline use, is captured in the Trustee estimate of lost user days. The degree to which the public avoided using the coastal resources (e.g., due to concerns for their health) was evaluated and included as part of the damage assessment (see Section 4.10).

**4-71 Comment:** Commenters noted that: “1. The discussion of Injury in the Draft Plan acknowledges the impacts to communities and individuals from lost recreational use, but it does not acknowledge the impacts to coastal communities in terms of their connection to their cultural and spiritual connection to the land. It also does not acknowledge the detrimental impacts which the oil spill has had on sacred sites (for all Coastal Tribes). 2. The discussion of Injury in the Draft Plan does not acknowledge the impacts to the livelihoods of coastal communities, beyond impacts to recreational use.”

**Response:** Lost cultural use of the impacted natural resources is an important consideration in any Natural Resource Damage Assessment. Any reduced ability to access and utilize impaired federal and state trust resources is captured in the lost recreational use assessment (Section 4.10), even if the purposes of those uses were cultural or spiritual. Although the cultural and spiritual uses were not separately valued in the assessment, those users were part of the

sampled population. Further, private party economic losses are beyond the scope of the assessment and the Trustees' authorities.

- 4-72 Comment:** The commenter requested that despite the difficulty of determining lost revenue to other human activities, these losses should be relentlessly researched from every aspect.

**Response:** Private party economic losses are beyond the scope of the natural resource and damage assessment under OPA.

- 4-73 Comment:** The commenter noted that the ready access to fishing and to the beach in the Gulf that she had as a child is not available to her grandchild. The commenter also noted that the oil spill disaster caused many black fishermen to lose their boats, to lose their livelihoods, and to move away from the area.

**Response:** Losses to recreational user days for fishing are incorporated in the Trustees' estimate of lost user days (Section 4.10). Restoration of fish and water column invertebrates is one of the types of restoration that are the focus of the "Replenish and Protect Living Coastal and Marine Resources" restoration goal. Issues like increasing public fishing access will be considered along with other options at later stages in the restoration planning process following the adoption of this programmatic plan.

## 8.3.5 Chapter 5: Restoring Natural Resources

### 8.3.5.1 General/Overall Comments on Restoration of Natural Resources

- 5-1 Comment:** Several commenters expressed support for the comprehensive, integrated ecosystem restoration approach that the Trustees selected as the preferred alternative.

**Response:** The Trustees acknowledge and appreciate the support for the comprehensive, integrated ecosystem restoration approach.

- 5-2 Comment:** The commenter noted that as with all programmatic environmental impact statements, the plan did not address project specifics, but the overview of the process and how a path to established alternative considerations, etc., was adequate for the level of review for a programmatic document.

**Response:** The Trustees acknowledge the comment.

- 5-3 Comment:** Commenters expressed concern that restoration would happen in coastal habitats rather than offshore where the DWH incident originated and where several of the injured resources exist.

**Response:** As part of the comprehensive, integrated ecosystem restoration portfolio, the Trustees allocated restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource

groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. In addition to offshore, near shore and coastal habitats were also affected by the DWH oil spill. The Trustees believe that coastal and nearshore habitat restoration is the most appropriate and practicable mechanism for restoring the ecosystem-level linkages disrupted by this spill. As ecologically significant as these coastal and nearshore habitats are, however, aspects of this vast and diverse injury will require additional restoration, especially to those resources that spend some or all of their lives in the open waters of the Gulf of Mexico. Therefore, this plan also calls for restoration, focused on specific resource groups including fish and water column invertebrates, marine mammals, sea turtles, sturgeon, and mesophotic and deep benthic communities, which will directly support the recovery of these vital resources.

- 5-4 Comment:** Commenters expressed concern that restoration would focus on recreational use projects such as boat ramps and piers or projects inland far from where the spill occurred rather than restoring habitats and wildlife. Some expressed concern that restoration should not occur outside the coastal zone.

**Response:** As part of the comprehensive, integrated, ecosystem restoration portfolio, the Trustees allocated restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and in each of the five Gulf state Restoration Areas to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. However, the identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans which will also be available for public review and comment. The trustees must evaluate and select the proposed restoration projects, based on the OPA evaluation standards, which includes the ability of the restoration project to provide comparable resources and services; that is, the nexus between the project and the injury is an important consideration in the project selection process.

Marine and coastal natural resources of the Gulf of Mexico provide recreational services to individuals from across the United States and around the world. The injuries to these natural resources caused by the DWH incident also caused losses to the recreational services associated with natural resources. Therefore, in order to fully compensate for all of the injuries caused by the spill, restoration also needs to compensate for lost recreational opportunities. For more information on lost recreational use, please refer to Chapter 4, Section 4.10. The Trustees understand that recreational losses can be addressed through ecological restoration strategies or other actions that restore or enhance the resources available to be enjoyed by the public. Yet because recreational losses caused by the spill are widespread and substantial, the Trustees considered it important to also consider projects that could address these losses more directly and expeditiously. However, it is worth noting that of the up to \$8.8 billion allocated across Restoration Types, less than 5 percent of the total allocation is for the Restoration Type “Provide and Enhance Recreational Opportunities.” The majority of the funds are for restoration of

marine and coastal habitats as well as specific natural resources such as marine mammals, sea turtles, birds, and sturgeon. For additional information on the allocation of funds, please refer to Section 5.10.

- 5-5 Comment:** The commenter stated that “the DWH incident which devastated so much of the Gulf coast will not be ameliorated without intense efforts and a great deal of time. Hopefully, there are sufficient funds to support these efforts, especially for turtle restoration. Restoration funds are needed so that the environment for these magnificent creatures will be fully restored.” The commenter wants their “grandchildren and their children to be able to see the Gulf and its wildlife the way they were before the spill.”

**Response:** The Trustees acknowledge and agree that the habitats and wildlife in the Gulf of Mexico are important resources. Therefore, the preferred alternative allocates restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. As part of this comprehensive, integrated ecosystem restoration portfolio, sea turtles are one of the living coastal and marine resources that will be restored in order to address the injuries caused by the DWH incident. There is \$163 million allocated to sea turtle restoration in addition to the more than \$49 million already allocated as part of the Phase IV Early Restoration Plan. For additional information on sea turtle restoration included in this PDARP/PEIS, please refer to Section 5.5.10. For additional information on the Early Restoration sea turtle project please refer to this fact sheet (NOAA & TPW 2015):

[http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454\\_dwh\\_factsheet\\_seaturtle.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454_dwh_factsheet_seaturtle.pdf).

- 5-6 Comment:** The commenter asked that the Trustees please make sure that a significant amount of funding is available for coastal dune and wetland restoration and dolphin recovery.

**Response:** The Trustees acknowledge and agree that the habitats and wildlife in the Gulf of Mexico are important resources. Therefore, the preferred alternative allocates restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. The Trustees allocate the greatest amount of funds to the goal of Restore and Conserve Habitat, given the critical role that coastal and nearshore habitats play in the overall productivity of the Gulf of Mexico. This allocation includes restoration of coastal dunes and wetlands among other habitat types. The Trustees also allocated funds to the goal of Replenish and Protect Living Coastal and Marine Resources. This allocation includes restoration specifically for marine mammals. For more information on the allocation of funds across Restoration Types, please refer to Section 5.10.

**5-7 Comment:** Several commenters expressed support for restoring wildlife such as sea turtles.

**Response:** The Trustees acknowledge the need and support for resource-specific restoration. Therefore, the Trustees allocated funds to the goal of Replenish and Protect Living Coastal and Marine Resources as part of the comprehensive, integrated ecosystem restoration portfolio. This includes funds specifically allocated to Restoration Types for fish and water column invertebrates, sturgeon, submerged aquatic vegetation, sea turtles, marine mammals, birds, oysters, and mesophotic and deep benthic communities. Allocating funds to these Restoration Types will ensure that species, life stages, and/or services not fully addressed by coastal and nearshore restoration will be addressed. For additional information on the allocation of funds, please refer to Section 5.10. For additional information on the Restoration Types that address living coastal and marine resources, please refer to Section 5.5.

**5-8 Comment:** Commenter(s) expressed general concern over the health of the Gulf and environment.

**Response:** The Trustees acknowledge the public's concern for the natural resources injured as a result of the spill and concern for the environment as a whole; however, many of these comments were outside the scope of the NRDA and this PDARP/PEIS. Through a comprehensive, integrated ecosystem approach the Trustees will allocate restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill.

**5-9 Comment:** The commenter stated that "drilling in the Gulf is precarious and short-sighted. The policy should shift from exploitation to protection."

**Response:** The Trustees acknowledge the comment; however, it is outside the scope of NRDA and this PDARP/PEIS.

**5-10 Comment:** The commenter stated that "the BP spill caused damages to the Gulf environment that are still having repercussions on the wildlife and environment of the region years later. It is imperative that BP be made to pay for the restoration and cleanup of all the petroleum products and the other chemicals used to cause the oil slicks to sink to the bottom of the Gulf. At the sea floor of the region there is a disruption of the breeding grounds and feeding grounds of the fish, crabs and crawdads, and as a result the economy of the fishing industry has been disrupted permanently. There needs to be a removal of the toxins, a restoration of the delicate habitat, and payment to the small and large fishermen who lost their ability to continue their commerce in the area. Investigate remedies using biologic petroleum eating organisms, or remove the sunken toxic substances and allow the area to get to a point where it tests clean."

**Response:** The Trustees have identified a comprehensive, integrated ecosystem restoration portfolio in order to restore for the range of injuries that occurred as a result of the DWH

incident. The Trustees conclude that this combination of efforts will work synergistically to restore for the full range of assessed injuries caused by this spill. By conducting restoration for both targeted species in the vast Gulf of Mexico food web and the habitats on which they rely, ecological linkages such as habitat-community-species interactions, predator-prey relationships, nutrient transfer and cycling, and organism migration and behavior may also feasibly be restored. The ecosystem approach to the restoration portfolio also includes a commitment to monitoring and adaptive management that accommodates the dynamics of ecosystems and new knowledge on how they respond, as well as continuous oversight and rigorous planning. Adaptive management will also be used to address currently unknown injuries that may be uncovered in the future. In this manner, the Trustees provide for a flexible, science-based approach to ensuring that the restoration portfolio provides long-term benefits to the resources and services injured by the spill in the manner envisioned in this programmatic plan. The Trustees acknowledge that many communities and individuals suffered financial and other hardships. Our role as Natural Resource Trustees is to address injuries to the natural environment. Individual and commercial claims are handled separately from this process. However, as part of the comprehensive, integrated ecosystem restoration portfolio there will be restoration for oysters and fish. These efforts will involve collaborating with Gulf scientists, fishery managers, and the fishing industry as well as building on existing research and monitoring efforts as appropriate for informing restoration decision-making. The Trustees also acknowledge the suggestions that there needs to be removal of toxins related to the DWH incident. The Trustees have in fact documented that oil persists in both the deep sea and, in some limited areas, nearshore sediments. However, it is not within the Trustees' authority to address response activities. Those activities are under the authority of the U.S. Coast Guard.

**5-11 Comment:** The commenter noted that it is important to restore marine life and to serve as stewards of the Earth for present and future generations.

**Response:** The Trustees acknowledge and agree that the habitats and wildlife in the Gulf of Mexico are important resources. Therefore, the preferred alternative allocates restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill.

**5-12 Comment:** The commenter noted that beaches and wildlife are one of the most important resources by attracting tourism. The commenter encouraged the Trustees to promote conservation of the waterfront, ocean species, and bird populations and to support economic and recreational growth by "further developing and preserving our irreplaceable ecosystem."

**Response:** The Trustees acknowledge and agree that the habitats and wildlife in the Gulf of Mexico are important resources. Therefore, the preferred alternative allocates restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority

watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. The Trustees specifically included the Provide and Enhance Recreational Opportunities Restoration Type because of the impacts to recreational uses as a result of the DWH incident. Because these recreational activities depend on healthy natural resources, restoration will include a portfolio of habitat, fisheries-based, recreational infrastructure, and education and outreach approaches to address all types of recreation that were affected. Promoting public engagement in restoration across the Restoration Types will also be important. This Restoration Type will be in addition to restoration under the Coastal, Wetlands, and Nearshore Habitat and Water Quality Restoration Types in order to emphasize education and access to improved recreational opportunities. For additional information on the Provide and Enhance Recreational Opportunities Restoration Type, please refer to Section 5.5.14.

- 5-13 Comment:** Several commenters expressed the need for and general support for conducting restoration, in general and for specific Restoration Types (such as sea turtles and marine resources), and not wasting the money on projects that will not restore for the damages that occurred as a result of the DWH incident.

**Response:** The Trustees acknowledge and agree that the habitats and wildlife in the Gulf of Mexico are important resources. The OPA regulations require that “Trustees must consider a natural recovery alternative in which no human intervention would be taken to directly restore injured natural resources and services to baseline” (40 CFR § 990.53[b][2]). As defined in the OPA regulations, baseline is the condition of the natural resources and services that would have existed had the incident not occurred (40 CFR § 990.30). Therefore, this PDARP/PEIS provides the public a nested framework of programmatic goals, Restoration Types, and restoration approaches that will guide and direct the subsequent phases of restoration including the identification and selection of specific projects that will restore injured resources back to baseline. This comprehensive, integrated ecosystem restoration portfolio allocates restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill.

- 5-14 Comment:** The commenter noted that “the money that will made available to the states will have to fund numerous projects, and it would be incredible to see some funding dedicated to scholarships for individuals interested in pursuing degrees in fields relevant to restoration in the Gulf of Mexico.”

**Response:** The Trustees’ role is to address injuries to the natural environment. While the Trustees acknowledge and agree that promoting education and inspiring individuals to pursue restoration-related degrees is important, funding scholarships is outside the scope of NRDA.

However, stewardship, education, and outreach as it relates to restoring natural resources is included as a restoration approach, “Promote Environmental Stewardship, Education, and Outreach,” which could be implemented with funds from multiple Restoration Types. For additional information on this restoration approach, please refer to Section D.8.3.

- 5-15 Comment:** The commenter stated that the plan is “a good first step.” “But the ecosystem restoration plan for the Gulf of Mexico and surrounding states’ coastlines is too loosely defined. There needs to be more specific criteria to address whether harm is being fixed.”

**Response:** The extensive injuries to multiple habitats, species, ecological functions, and geographic regions clearly establish the need for comprehensive restoration planning on a landscape and ecosystem scale that recognizes and strengthens existing connectivity between habitats, resources, and services in the Gulf of Mexico. A comprehensive restoration plan must consider this ecosystem context in deciding how best to restore for the vast array of resources and services injured by this spill.

To fulfill the OPA mandate, the Trustees have pursued an iterative and phased restoration planning process, which enables the Trustees to adapt their restoration planning as more information becomes available. Given the scope and magnitude of restoration remaining to be conducted, the Trustees are undertaking this next step of restoration planning at a program level. The Trustees developed the PDARP/PEIS to clearly set before the public a nested framework of programmatic goals, Restoration Types, and restoration approaches that will guide and direct the subsequent phases of restoration. Those subsequent phases of restoration will identify, evaluate, and select specific restoration projects for implementation that are consistent with the restoration framework laid out by this PDARP/PEIS.

As part of comprehensive, integrated ecosystem restoration the Trustees also included a monitoring and adaptive management framework. The Trustees will perform monitoring and analysis for all restoration projects implemented under this plan, as per the OPA regulations, to evaluate whether projects are meeting their objectives and to inform the need for corrective actions. Additional monitoring and scientific support at the project level may be conducted to support project design, location, and implementation; identify environmental factors that may influence project success; support project compliance; and better understand ecological functions and benefits. To increase the likelihood of successful restoration, the Trustees will conduct monitoring and evaluation of restoration outcomes, which can provide feedback to inform decision-making for current projects and refine the selection, design, and implementation of future restoration actions.

- 5-16 Comment:** A commenter recommended adding future protection and maintenance, restoration, and protection of natural resources as part of the restoration goals. The commenter stated that “restoring is not the complete solution; protection and maintenance of the resources should be our priority.”

**Response:** Under OPA, restoration means any action (or alternative), or combination of actions (or alternatives), to restore, rehabilitate, replace, or acquire the equivalent of injured natural

resources and services (40 CFR § 990.30). The Trustees used this definition when developing the restoration approaches to address the injuries to natural resources as a result of the DWH incident. These restoration approaches are inclusive of actions to maintain and protect existing resources and habitats. For additional information on the restoration approaches, please refer to Appendix 5.D.

- 5-17 Comment:** The commenter urged the Trustees to clarify that any such establishment or expansion would be developed and implemented only to the extent that they are specifically authorized by statute, specifically with regard to the references to the establishment or expansion of marine protected areas, and in light of previous and ongoing linkages between Coastal and Marine Spatial Planning (CMSP) and marine protected areas (MPAs).

**Response:** The Trustees identified the potential for establishing protections, which could include MPAs, for injured natural resources as a restoration approach within the PDARP/PEIS. The purpose of an MPA is to apply a comprehensive, ecosystem-based approach to conserve marine resources, allow for various uses within its boundaries, provide the flexibility to resolve conflicting use problems, and provide the authority to enforce protections. To implement these types of management actions, the Trustees will need to coordinate with multiple stakeholders through the advisory group and public review processes that are a part of establishing protections. Many federal statutes and mechanisms govern the use, management, protection, and conservation of marine areas and marine resources. If this restoration approach is identified and selected in future project-specific restoration plans, the specific mechanism and location will be identified and additional evaluation and public involvement will be conducted.

- 5-18 Comment:** A commenter stated that if it is in fact the intent to refer to spatial planning under the National Ocean Policy (NOP), the commenter “strongly urges the Trustees to avoid the potential for the restoration plan to add to those uncertainties and concerns by removing all references to spatial planning. The need for doing so is magnified by the fact that most of the public and many decision-makers remain unaware of the NOP/CMSP initiative, and since the Gulf Coast states have elected not to form a Regional Planning Body to participate in the effort during the five years that the NOP has been in place. Given the entirety of these circumstances, the Draft PDARP/PEIS is not an appropriate mechanism for furthering the NOP/CMSP in the Gulf of Mexico. To the degree that the Trustees do not intend to refer to the NOP/CMSP when mentioning ‘spatial planning’ and decide to maintain such references in the final product, the PDARP/PEIS should describe in detail the spatial planning activities and processes that are intended to be referenced and carried out and the specific statutory and regulatory authorities that would permit their use, and allow additional opportunities for the public to comment on those draft activities and processes.”

**Response:** The Trustees are using the words “spatial planning” generally to refer to monitoring tools that can help to better plan restoration actions for natural resources, specifically marine mammals, that were injured as a result of the DWH incident. It is not being used in the context of the NOP or to refer to the body of literature on CMSP.

- 5-19 Comment:** Commenters expressed the need to specifically add shrimp and crabs to the Restoration Types similar to oysters.

**Response:** Oysters are included as a Restoration Type not just because of their importance as a resource, but also because of their habitat value for other fish and invertebrates that use the structure that oyster reefs provide for shelter and foraging. In order to address the fish and water column invertebrates and nearshore resources (including shrimp and crabs) that were injured by the DWH incident, the Trustees will implement a portfolio of restoration approaches for these injuries that is threefold: 1) Coastal and nearshore habitat restoration, discussed and implemented under the Wetlands, Coastal, and Nearshore Habitats Restoration Type (Section 5.5.2), SAV Restoration Type (Section 5.5.8) and Oysters Restoration Type (Section 5.5.9). 2) Offshore habitat restoration, discussed and implemented under the Mesophotic and Deep Benthic Communities Restoration Type (Section 5.5.13). 3) Mortality reduction, accomplished by addressing known sources of mortality to fish and invertebrates by reducing bycatch and fisheries interactions discussed and implemented under this Restoration Type (Section 5.5.6). Implementing this portfolio of restoration approaches provides a robust, comprehensive solution to addressing the range of injured water column species (including shrimp and crabs) and their varying life stages.

- 5-20 Comment:** The commenter noted that “sturgeon and oysters are important enough” to be Restoration Types, but there are no Restoration Types for “crab, shrimp, or social science, and most of all cooperative research with the fishing industry.”

**Response:** Oysters are included as a Restoration Type not just because of their importance as a resource, but also because of their habitat value for other fish and invertebrates that use the structure that oyster reefs provide for shelter and foraging. Sturgeon are included as a Restoration Type because they were injured as result of the DWH incident and because of their status as threatened under the Endangered Species Act to ensure that sufficient restoration funds were allocated to restoring these specific resources. In order to address the fish and water column invertebrates and nearshore resources (including shrimp and crabs) that were injured by the DWH incident, the Trustees will implement a portfolio of restoration approaches for these injuries that is threefold: 1) Coastal and nearshore habitat restoration, discussed and implemented under the Wetlands, Coastal, and Nearshore Habitats Restoration Type (Section 5.5.2), SAV Restoration Type (Section 5.5.8) and Oysters Restoration Type (Section 5.5.9). 2) Offshore habitat restoration, discussed and implemented under the Mesophotic and Deep Benthic Communities Restoration Type (Section 5.5.13). 3) Mortality reduction, accomplished by addressing known sources of mortality to fish and invertebrates by reducing bycatch and fisheries interactions discussed and implemented under this Restoration Type (Section 5.5.6). Implementing this portfolio of restoration approaches provides a robust, comprehensive solution to addressing the range of injured water column species (including shrimp and crabs) and their varying life stages. This restoration portfolio also includes monitoring to inform restoration decision-making. For the Fish and Water Column Invertebrates Restoration Type, monitoring and adaptive management of water column restoration projects will rely heavily on existing and expanded fishery observer programs and other fishery-dependent data, given the

connection between this Restoration Type and existing fishery management efforts. In addition, these efforts will involve collaborating with Gulf scientists, fishery managers, and the fishing industry as well as building upon existing research and monitoring efforts as appropriate for informing restoration decision-making.

### 8.3.5.2 Habitat Restoration

**5-21 Comment:** A commenter would hope to see funding toward the basics of the food chain in our habitat—such as restoring SAV and improving water quality. The commenter noted that Florida will not be receiving money for fish and water column invertebrates.

**Response:** The Trustees acknowledge the support for an ecosystem approach to restoration that recognizes the important linkages between habitats and the resources that utilize those habitats. As part of the preferred alternative, the Trustees allocate the greatest amount of funds for habitat restoration, given the critical role that coastal and nearshore habitats play in the overall productivity of the Gulf of Mexico. In addition, the Trustees allocate funds to improve water quality in coastal watersheds as part of the strategy to address ecosystem-level injuries as well as specific aspects of lost recreational use. Florida has a substantial allocation for habitat restoration and water quality improvements under the Wetlands, Coastal, and Nearshore Habitats; Habitat Projects on Federally Managed Lands; Nutrient Reduction (Nonpoint Source); and Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation) Restoration Types. The allocation for the Fish and Water Column Invertebrates Restoration Type is only included under the Open Ocean Restoration Area for direct restoration through fisheries bycatch reduction. Trustees will coordinate with Florida as part of the identification and selection of specific projects for this Restoration Type in future project-specific restoration plans.

**5-22 Comment:** A commenter supported the “chosen alternative to establish an integrated restoration portfolio that emphasizes the broad ecosystem benefits that can be realized through coastal habitat restoration.” The commenter also encourages the Trustees to consider projects that will “sustainably restore habitats, such as restoring adequate freshwater inflows into basin estuaries in Texas that so desperately need the water to support important nursery grounds for the Gulf’s wildlife and fisheries” and to prioritize projects that address underlying system stressors and benefit several Restoration Types.

**Response:** The Trustees acknowledge that restoring hydrologic connectivity is important and included it as part of the restoration approach “Create, Restore, and Enhance Coastal Wetlands” (Section 5.D.1.1). This restoration approach could be implemented under multiple Restoration Types including Wetlands, Coastal, and Nearshore Habitats; Habitat Projects on Federally Managed Lands; Nutrient Reduction (Nonpoint Source); Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation); Birds; and Provide and Enhance Recreational Opportunities. However, the identification and selection of specific projects, including specific techniques and locations, will be done in future project-specific restoration plans that will be available for public review and comment.

- 5-23 Comment:** A commenter stated that “for Texas, in particular, loss of wetland habitat and coastal erosion are major areas of concern. Restoring habitat and potentially addressing water needs, current and future, would be worthwhile uses for the award money.”

**Response:** The Trustees acknowledge and agree that habitat restoration is an important component of the comprehensive, integrated ecosystem restoration portfolio. There are funds allocated across all five Gulf state Restoration Areas for the Wetlands, Coastal, and Nearshore Habitat Restoration Type. For Texas in particular, there is \$100 million allocated for habitat restoration. There are multiple restoration approaches that could be implemented with these funds to address loss of wetland habitat and coastal erosion, such as creation, restoration, and enhancement of coastal wetlands, oyster reefs, barrier and coastal islands and headlands, and dunes and beaches. For more information on the restoration approaches that could be implemented, please refer to Section 5.D.1.

- 5-24 Comment:** Commenters expressed support for wetland restoration because of the multiple benefits provided to fish and other wildlife and the entire Gulf of Mexico ecosystem.

**Response:** The Trustees acknowledge and agree that a comprehensive integrated ecosystem restoration portfolio is the best option for restoring the injuries that occurred as a result of the DWH incident. This integrated restoration portfolio addresses the diverse suite of injuries that occurred at both regional and local scales. The Trustees allocated restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. These Restoration Types work both independently and together to achieve necessary benefits to injured resources and services at the ecosystem level. The specific projects and locations of restoration will be determined in subsequent project-specific restoration plans, which will be available for public review and comment.

- 5-25 Comment:** A commenter encouraged that Trustees consider sea level rise and ongoing erosion issues. In particular, the commenter encouraged the Trustees to consider if there are ways to use the NRDA money that are looking at natural resources damage and potentially leverage this money with other available funds for gray infrastructure to support the shoreline in order to combine some of the gray protective infrastructure with the green ecological infrastructure.

**Response:** The specific techniques, materials used, and locations are project-level considerations that will be determined during project identification and selection in future restoration plans. As part of this future decision-making, the Trustees will also consider opportunities for leveraging other funds (e.g., RESTORE Act monies) and existing restoration efforts in order to create more complex projects. These project-specific restoration plans will be subject to public review and comment.

**5-26 Comment:** Commenter(s) supported coastal restoration work that strategically prioritizes protecting coastal communities. The Draft PDARP/PEIS outlines “goals for wetland habitat restoration”; that goal should be combined with “goals for protecting human communities as well.” There should be language included “about wetland restoration with a metric that takes into account the benefit of a wetland project for nearby human populations. Coastal communities can be and should be better served by these restoration goals. For example, in this plan, sediment diversions should focus on rebuilding land not only for wetland species’ habitat, but also for the protection they can serve to local human populations. Rebuilding land should strategically prioritize protecting people while it rebuilds habitat for other species impacted by the spill.” In particular, “include language that prioritizes wetland rebuilding and habitat conservation around sacred indigenous grounds. At present, many mounds and ridges that are designated sacred sites for both federally recognized and nonrecognized tribes in coastal Louisiana are washing into the Gulf. Coastal native communities have requested that these sacred grounds be prioritized for restoration and land-building efforts. We support their bid for maintaining sacred sites in conjunction with wetland restoration, and request the Trustees to include language to this effect in their plan.”

**Response:** The Trustees considered existing regional restoration plans in developing the restoration approaches that are included in the Draft PDARP/PEIS. In particular, with regard to restoration in Louisiana, the Trustees used the Louisiana Coastal Master Plan. That plan was developed to address a number of important objectives, including protection of Coastal Communities and their cultural resources. The Trustees have an obligation under OPA to focus their efforts on restoring the natural resources that were injured by the DWH incident. It is anticipated that as projects are implemented, there will be secondary or ancillary benefits to coastal communities, including some of the flood protection benefits discussed by the commenter. The identification and selection of projects, including details on location and design, will be done in future project-specific restoration plans. It is worth noting that Gulf restoration efforts such as those funded by the RESTORE Council and National Fish and Wildlife Foundation (NFWF) may also provide coastal protection benefits.

**5-27 Comment:** Several commenters expressed support for diversions as part of the portfolio of habitat restoration approaches.

**Response:** The Trustees acknowledge and agree that habitat restoration, including river diversions, is an important component of the comprehensive, integrated ecosystem restoration portfolio.

**5-28 Comment:** A commenter stated that “the diversion plan, long on the drawing boards, does not address the loss of mineral rights, because those acres are now gone, the oil has ruined the acres, and now instead of having any land, the marshland, it’s now going to be water. Those mineral rights will revert somewhere else away from the parish. Also, and finally, the diversion plan itself is uncertain whether it will actually create acreage in the marsh. There’s no scientific evidence that that diversion plan will create acreage that’s being lost because of the heavy oiling, every day, and in the future.”

**Response:** The issues raised in the comment are outside the scope of this PDARP/PEIS. The Trustees will continue to evaluate specific diversion projects and will present any viable projects in future restoration plans, which will be available for public review and comment at a later date.

- 5-29 Comment:** One commenter expressed support for beaches and dunes. “There are four main reasons to have beaches and dunes: recreational, ecological, protection, and economic reasons; the NRDA plan really addresses some of the recreational and ecologic issues.”

**Response:** Beach and dune restoration is included as part of the restoration approach “Restore and Enhance Dunes and Beaches” (Section 5.D.1.5). As noted in the comment, beaches and dunes serve many important functions in the coastal ecosystem. In recognition of those multiple functions, this restoration approach was included under multiple allocations for Wetlands, Coastal, and Nearshore Habitats; Habitat Projects on Federally Managed Lands; Birds; and Provide and Enhance Recreational Opportunities.

- 5-30 Comment:** Commenters expressed support for restoration of barrier islands and in particular land acquisition and protection of barrier island systems in general and specifically in Texas.

**Response:** The Trustees acknowledge and agree that habitat restoration provides benefits to multiple resources, which is why the majority of funds were allocated to the Wetlands, Coastal, and Nearshore Habitats Restoration Type. Specifically in Texas, there is an allocation of \$100 million in order to conduct restoration under this Restoration Type. Land acquisition as part of the restoration approach “Protect and Conserve Marine, Coastal, Estuarine, and Riparian Habitats” (Section 5.D.1.7) and barrier island restoration as part of the restoration approach “Create, Restore, and Enhance Barrier and Coastal Islands and Headlands” (Section 5.D.1.4) are included as restoration approaches that could be implemented under the Wetlands, Coastal, and Nearshore Habitat Restoration Type. However, the identification and selection of specific projects, including specific techniques and locations, will be done in future project-specific restoration plans that will be available for public review and comment.

- 5-31 Comment:** A commenter expressed support for barrier island restoration, in particular Galveston, because of the importance of the barrier islands and because of the constant threat from storms and oil spills that barrier islands and their inhabitants are under.

**Response:** Barrier island restoration is a project type that may be included as part of the restoration approach “Create, Restore, and Enhance Barrier and Coastal Islands and Headlands” (Section 5.D.1.4). The Trustees recognize the importance of barrier islands and the multiple resource benefits and recreational opportunities that restoring these habitats can create, these will be considered when selecting projects. Therefore, this restoration approach is included under multiple Restoration Types. Specifically in Texas, there is an allocation of \$100 million for the Wetlands, Coastal, and Nearshore Habitat Restoration Type and \$20 million for the Birds Restoration Type, which could be used to implement barrier island restoration as one of the several potential restoration approaches that could be implemented. However, the identification and selection of specific projects, including specific techniques and locations, will

be done in future project-specific restoration plans that will be available for public review and comment.

- 5-32 Comment:** One commenter noted the “complexities between healthy uplands and healthy water” and hopes that “efforts to replace basic species of plants and animals would be coordinated via the adaptive management comprehensive plan.” The commenter also noted that invasive species, lionfish, cogongrass, popcorn trees, and Japanese climbing fern should also be addressed as part of the restoration plan.

**Response:** Invasive species management is included as part of the restoration approach “Protect and Conserve Marine, Coastal, Estuarine, and Riparian Habitats.” Management actions for invasive species could target flora and/or fauna that are negatively affecting the function of a habitat as part of a restoration project. This restoration approach could be implemented under multiple Restoration Types. For more information, please refer to Section 5.D.1.7.

- 5-33 Comment:** One commenter supported implementing/funding a plan to protect what was almost destroyed during the oil spill, and improve the state’s wildlife habitats around the Alabama Gulf Coast and Mobile Tensaw Delta. In particular, restoration should include support for the Forever Wild Program and continue purchasing public land. The commenter also suggested reviewing the opinion/editorial article at this link (Dute 2015):

[http://www.al.com/opinion/index.ssf/2015/11/the\\_current\\_bp\\_oil\\_settlement.html#incart\\_river](http://www.al.com/opinion/index.ssf/2015/11/the_current_bp_oil_settlement.html#incart_river).

**Response:** The Trustees have reviewed the opinion/editorial article written. The Trustees determined that the proposed settlement and associated governance procedures will provide a reasonable and effective mechanism for restoring, rehabilitating, replacing, or acquiring the equivalent of natural resources or services that were injured or lost as a result of the spill, as required by OPA. As part of this settlement agreement, Alabama will receive allocations that are intended to target the state’s habitats and resources that were injured by the DWH incident and fund Restoration Types intended to meet the restoration goal of Replenishing and Protecting Living and Coastal Marine Resources. For additional information on the allocation, please refer to Section 5.10.2. Specific restoration projects will be developed by the Alabama TIG and a restoration plan(s) will be published for public review and comment. The types of restoration approaches that the Alabama TIG may consider when proposing and selecting restoration projects are described in Appendix 5.D. Overall, the proposed process ensures that the OPA settlement funds will be used for effective future restoration and protection of coastal Alabama’s natural resources and the services that they provide, while providing the public with the opportunity to review and comment on the development of future project-specific restoration plans. There are other settlement funds discussed by in the article but those funds are not part of the NRDA, are not governed by the OPA process, and are therefore subject to different legal standards regarding how they may be spent.

- 5-34 Comment:** A commenter noted that the “Protect and Conserve Marine, Coastal, Estuarine, and Riparian Habitats” restoration approach “is one of the key approaches that would be funded with DEIS and Restoration Plan funds. The protection of important riparian habitats like

Columbia Bottomlands (San Bernard and Brazoria National Wildlife Refuges) and Trinity River National Wildlife Refuge ensure that bottomland hardwood and riparian woodlands are acquired and protected for birds, forested wetlands, and clean water. Protection of marine areas like the Flower Garden Banks National Marine Sanctuary and the 'Islands in the Stream' topographic highs in the [Gulf of Mexico] ensure that a healthy [Gulf of Mexico] will exist from east to west and from top to bottom. It is also particularly important to acquire lands behind existing shorelines, beaches, dunes, marshes, and other coastal features so that sea level rise habitat adjustments can occur and human structures are minimally affected."

**Response:** The Trustees acknowledge the comment and specific location recommendations, and Texas has several allocations which could be used to implement these types of habitat protection projects. However, the identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans, which will also be available for public review and comment.

- 5-35 Comment:** Commenter(s) indicated that "there is not sufficient explicit recognition of the use of conservation land acquisition in fee or easement to accomplishing restoration goals. Land acquisition is often required to ensure access to and permanent maintenance of restoration sites such as wetlands, buffering uplands, riparian corridors and barrier islands; establish the permanent habitat connectivity emphasized in the DARP; offset habitat loss by avoiding the development and loss of coastal habitat types; secure inholdings to existing public lands to enable ongoing management such as through the use of prescribed fire and invasive species control; encourage compatible management by private landowners to, for example, reduce nonpoint sources of water pollution; and provide public access for the use and enjoyment of the Gulf's natural resources The final DARP should include such references in the appropriate parts of the text of Chapter 5."

**Response:** The Trustees acknowledge the comment and have incorporated revisions into Section 5.D.1.7 in the document to reflect the comment.

- 5-36 Comment:** A commenter noted that "it is important to recognize that ecosystem restoration in the Gulf of Mexico will be an ongoing need for decades into the future, regardless of the success of individual restoration efforts, because of the threats to the entire system from sea level rise, altered river flows, and altered storm severity and intensity due to climate change. Given these realities, it is important to implement some habitat restoration projects that will have a shorter lifespan in order to maintain ample habitat in the near-term, while working to create more sustainable projects that will provide habitat in the mid-term. In the long-term, and beyond the scope of this PDARP, there needs to be recognition by funders and decision-makers that restoration will be ongoing and iterative, and there needs to be the political will and funding to support continued adaptation and resilience of our coast."

**Response:** As acknowledged by the commenter, providing for long-term funding by identifying additional funding streams is beyond the scope of this PDARP/PEIS and, indeed this is the case. The Trustees recognize the need to coordinate across Gulf restoration efforts. The Trustee Council and TIGs share responsibility to coordinate with other DWH restoration programs.

Coordination among programs will promote successful implementation of this PDARP/PEIS and optimize ecosystem recovery within the Gulf. The Trustee Council may consider the restoration actions of these other programs and facilitate the TIGs in identifying synergies, leveraging opportunities, and evaluating cumulative effects, as well as reducing potential redundancy when selecting projects under this PDARP/PEIS. The Trustees also acknowledge the systemic threats of climate change and will consider key ecological factors such as connectivity, size, and distance between projects, as well as factors such as resiliency and sustainability in project selection, design, and implementation. Those factors will be considered as part of future project-specific restoration plans, which will be made available for public review and comment.

- 5-37 Comment:** A commenter noted that “throughout the process of assessing the damage from the DWH disaster and developing plans and recommendations, there were recommendations to invest in landscape-scale land protection focused on critical watersheds and natural habitats. Permanent protection of watersheds, natural habitats, ecosystems, rivers, and estuaries can be accomplished by strategic investments in land protection, followed by restoration and sustained management, where needed. Over 80 percent of the lands in the Gulf region are in private ownership. Commenter(s) were pleased to see that permanent land protection will be a priority in the DWH oil spill restoration effort.”

**Response:** The Trustees acknowledge the support for land acquisition as part of the comprehensive, integrated ecosystem restoration approach.

- 5-38 Comment:** A commenter noted that some injured federal lands are not suitable restoration sites due to persistent or foreseeable threats to the resources contained therein. Please consider restoration activities off site, at newly acquired parcels, or other federal lands with similar resources.

**Response:** The Trustees will evaluate threats to resources located on federal lands as part of the restoration process for restoration projects located on federally managed lands. As discussed in Section 5.5.3.2, the Trustees will look to other federally managed lands in the Gulf of Mexico when restoration cannot be implemented on a specific injured property.

- 5-39 Comment:** A commenter encouraged the implementation of best management practices (BMPs) and mitigation to support the reduction of visitor impact on restored federal lands.

**Response:** The Trustees concur and will pursue projects that will help minimize the impacts created by visitation as discussed in Section 5.5.3.2.

- 5-40 Comment:** One commenter noted that there should be language added to “the description of the Restoration Type Category ‘Habitat Projects on Federally Managed Lands’ that provides that land additions to federally managed resources that protect habitat identified as critical for Gulf Coast restoration, including coastal wetlands, marsh, oysters, submerged aquatic vegetation, sand beaches, and dunes, could qualify as projects that meet this Restoration Type.”

**Response:** The Trustees acknowledge and agree that habitat restoration provides benefits to multiple resources. More specifically, land acquisition as part of the restoration approach

“Protect and Conserve Marine, Coastal, Estuarine, and Riparian Habitats” (Section 5.D.1.7), which is included as a restoration approach that could be implemented under the Habitat Projects on Federally Managed Lands Restoration Type.

**5-41 Comment:** A commenter supported most of this overall plan, but indicated that there are not enough details for the “SAV aspect of restoration compared to other aspects of the plan. Restoring SAV can be a very tricky undertaking with abysmal success rates and for something so important ecosystem-wise. Therefore, more attention should be given to its restoration strategy.”

**Response:** This PDARP/PEIS provides a framework of programmatic goals, Restoration Types, and restoration approaches that will guide and direct the subsequent phases of restoration including the identification and selection of specific projects that will restore injured resources back to baseline. Those subsequent restoration plans will include more details on the restoration projects for SAV. However, the Trustees described some general planning and implementation considerations for SAV restoration in Section 5.5.8.3. The project-specific plans will take into account those considerations as well as specific considerations of additional geographic and restoration techniques.

**5-42 Comment:** One commenter was skeptical that the restoration dollars would be spent wisely and help put fisherman back to work. The commenter also stated that the restoration dollars should focus on economically rebuilding the Gulf Coast with the money. The commenter expressed disappointment that restoration has not been focused appropriately on fisheries and supporting fisherman.

**Response:** The Trustees acknowledge that many communities and individuals suffered financial and other hardships. Our role as Natural Resource Trustees is to address injuries to the natural environment. Individual and commercial claims are handled separately from this process. However, as part of the comprehensive, integrated ecosystem restoration portfolio there will be restoration for oysters and fish. The Oyster Restoration Type and Fish and Water Column Invertebrates Restoration Type each have specific funding allocations in addition to the funds allocated for the Wetlands, Coastal, and Nearshore Habitats Restoration Type. These funds are distributed across the Regionwide, Open Ocean, and five Gulf state Restoration Areas. In addition, the Trustee Council coordinates with each Restoration Area to track and report the aggregated implementation status of the restoration program to the public and ensures that implementation is consistent with the commitments described in this PDARP/PEIS and future project-specific restoration plans. As stewards of public trust resources under OPA, the Trustees engage and inform the public and maintain an open and documented process for implementing restoration under this PDARP/PEIS. To effectively act on behalf of the public, the Trustees maintain transparency by establishing public engagement and reporting policies.

### 8.3.5.3 Water Quality Restoration

**5-43 Comment:** Commenters expressed support for including water quality, such as projects that address sewage treatment, as part of the comprehensive, integrated ecosystem restoration

portfolio. There was also a question about reducing Gulf hypoxia as part of the water quality restoration approaches.

**Response:** The Trustees acknowledge that water quality is an important factor for an ecosystem approach to restoration. Therefore, the Trustees allocated funds to improve water quality in coastal watersheds as part of the strategy to address ecosystem-level injuries as well as specific aspects of lost recreational use. Specifically, the Trustees allocated \$110 million to the Nutrient Reduction (Nonpoint Source) Restoration Type throughout all five Gulf state Restoration Areas to address excessive nutrient loading into coastal watersheds, which in turn will reduce threats such as hypoxia, harmful algal blooms, and habitat losses, thereby compensating for injuries to multiple resources and broken ecosystem-level linkages. The Trustees also allocated \$300 million to Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation) in the Florida Restoration Area to address water quality degradation that will compensate not only for injured resources and broken ecosystem-level linkages, but also for recreational losses caused by the spill. Focusing this effort within the state of Florida will address specific water quality issues that adversely affect the overall health and quality of this state's beaches, bays, and nearshore habitats that have high recreational value. However, the Trustees want to note that efforts to reduce Mississippi River Basin nutrient inputs and hypoxia within the Gulf of Mexico are not included as part of the Nutrient Reduction (Nonpoint Source) and Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation) Restoration Types. The Trustees considered Gulf hypoxia reduction but decided that it would be best to focus water quality improvements in coastal watersheds in each of the five Gulf state Restoration Areas. For more information on the rationale for why the Trustees will not be implementing efforts to reduce Mississippi River Basin nutrient inputs and hypoxia within the Gulf of Mexico, please refer to Section 5.C.4.2, Restoration Approaches Considered and Not Carried Forward into Alternatives.

**5-44 Comment:** Commenters expressed support for water quality restoration and recommended land acquisition as a restoration approach for the water quality Restoration Types.

**Response:** Land acquisition is included as part of the restoration approach "Protect and Conserve Marine, Coastal, Estuarine, and Riparian Habitats." This restoration approach is included under both the Nutrient Reduction (Nonpoint Source) and Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation) Restoration Types. The specific restoration projects and locations will be identified and selected as part of subsequent project-specific restoration plans, which will also be available for public review and comment. For more information on these Restoration Types and restoration approaches, please refer to Section 5.5.4, Restoration Type: Nutrient Reduction (Nonpoint Source), and Section 5.5.5, Restoration Type: Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation).

**5-45 Comment:** A commenter wanted to highlight some of the examples that were mentioned in the document that are really critical restoration projects. Under the Restoration Types Water Quality and Nutrient Reduction, highlighted examples include creating and enhancing wetlands,

coastal and riparian stream and river/bay conservation; erosion control practices such as rigging the shoreline's designated buffers, and restoring natural hydrologic flow.

**Response:** The Trustees acknowledge the support for the restoration approaches that were included under the Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation) and Nutrient Reduction (Nonpoint Source) Restoration Types.

- 5-46 Comment:** One commenter indicated that “water is an important resource on which every living being on this earth is dependent upon.” The commenter also indicated that improving water quality should be included.

**Response:** The Trustees acknowledge that water quality is important for an ecosystem approach to restoration. Therefore, the Trustees allocated funds to improve water quality in coastal watersheds as part of the strategy to address ecosystem-level injuries as well as specific aspects of lost recreational use. For additional information on the water quality Restoration Types, please refer to Sections 5.5.4 and 5.5.5.

- 5-47 Comment:** One commenter requested that Texas should receive funding in the Water Quality Restoration Type.

**Response:** Texas is slated to receive significant funding to address coastal water quality issues associated with non-point source nutrient pollution, which is one of the largest water quality issues facing Texas bay and Gulf waters. It is anticipated that these efforts, in combination with efforts focused on habitat restoration and conservation efforts, which often also benefit water quality, will serve to improve coastal water quality and, combined with other Restoration Type allocations, will sufficiently address injuries in Texas from the spill relating to water quality.

#### 8.3.5.4 Fish Restoration

- 5-48 Comment:** One commenter indicated that the PDARP/PEIS should specifically include “stock assessment work or scientific effort” on the species that are harvested (crab, shrimp).

**Response:** The Trustees will perform monitoring and analysis for all restoration projects implemented under this plan, as per the OPA regulations, to evaluate whether projects are meeting their objectives and to inform the need for corrective actions. Additional monitoring and scientific support at the project level may be conducted to support project design, location, and implementation; identify environmental factors that may influence project success; support project compliance; and better understand ecological functions and benefits. The Trustees may also perform targeted resource-level monitoring and scientific support activities for those Restoration Types with substantial gaps in scientific understanding that limit restoration planning, implementation, evaluation, and/or understanding of resource recovery status. Scientific activities to address these uncertainties could include better characterization of the status and trends and spatiotemporal distributions of injured resources and habitats targeted by this restoration plan to improve the Trustees' ability to target restoration activities and track resource recovery. For the Fish and Water Column Invertebrates Restoration Type, monitoring and adaptive management of water column restoration projects will rely heavily on existing and expanded fishery observer programs and other fishery-dependent data, given the connection

between this Restoration Type and existing fishery management efforts. In addition, these efforts will involve collaborating with Gulf scientists, fishery managers, and the fishing industry, as well as building on existing research and monitoring efforts as appropriate for informing restoration decision-making. Resource-level monitoring may be required to support planning, implementation, and evaluation of fish and water column restoration. Monitoring and scientific support may be conducted to improve understanding of the status and trends of key water column resources and to better define the effectiveness of bycatch reduction and bycatch mortality reduction approaches for species intended for restoration. In addition to providing information needed to adaptively manage restoration actions, these additional data collection efforts may provide fisheries managers with better information on which to make management decisions, which could provide further benefit to the species targeted for restoration. For additional information on monitoring for the Fish and Water Column Invertebrates Restoration Type, please refer to Section 5.5.6.4.

**5-49 Comment:** A commenter recommended focusing on fisheries restoration.

**Response:** The Trustees allocated \$380 million (in addition to the \$20 million already provided under Early Restoration) to address direct sources of mortality to fish and water column invertebrates. The Trustees also allocated over \$162 million for oyster restoration. These two allocations are in addition to all of the funds that will be used to implement habitat restoration in the nearshore and coastal environments across the five Gulf state Restoration Areas. This combination of habitat and resource-specific restoration actions are part of the integrated restoration portfolios that the Trustees believe will ensure that fish and water column invertebrate species, life-stages, and/or services are fully compensated for.

**5-50 Comment:** Commenters expressed support for using habitat restoration to compensate for damages to fish and the Gulf ecosystem with recommendations for specific estuaries where restoration could be implemented.

**Response:** The Trustees acknowledge and agree that the injuries affected such a wide array of linked resources over such an enormous area that the effects of the DWH spill must be described as constituting an ecosystem-level injury. Just as the injuries cannot be understood in isolation, restoration efforts must also be considered and implemented from a broader perspective. Consequently, the Trustees' preferred restoration alternative was similarly developed using an ecosystem-level approach, informed by reasonable scientific inferences based on the information collected for representative habitats and resources. This approach resulted in the comprehensive, integrated ecosystem restoration portfolio (referred to as the integrated restoration portfolio). This integrated restoration portfolio addresses the diverse suite of injuries that occurred at both regional and local scales. The preferred alternative allocates restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. However, the Trustees have

not identified specific projects or locations as part of this PDARP/PEIS. Rather the Trustees, via TIGs for each Restoration Area, will prepare series of subsequent restoration plans to propose and select specific projects and locations for implementation. The restoration plans will propose specific projects that will be consistent with this PDARP/PEIS and will be presented for public review and comment.

- 5-51 Comment:** A commenter expressed support for working collaboratively with fishermen to restore fish species and protected marine resources through future bycatch reduction projects, including projects similar to the Pelagic Longline Bycatch Reduction Project initiated under Phase IV of Early Restoration. The commenter also urged that the PDARP/PEIS be revised to ensure that funding allocated for these purposes remains sufficient and is not reallocated for other uses.

**Response:** The Trustees acknowledge and agree that reducing bycatch is an important component of a restoration portfolio to restore fish and water column invertebrates as well as providing benefits to other living coastal and marine resources such as sea turtles and marine mammals. The Trustees allocated \$380 million (in addition to the \$20 million already provided under Early Restoration) to address these direct sources of mortality to fish and water column invertebrates. Any change to funding that is significant enough to constitute a modification of the PDARP/PEIS, within its respective Restoration Area, will be communicated to the Trustee Council. By agreement of the TIG, changes to the amount of funding to be spent on a Restoration Type within a Restoration Area may be made after the TIG proposes a revised restoration plan, subject to public review and comment. Modifications to shift funding designated for one restoration goal to another restoration goal will be made only with the consensus of the Trustees in the TIGs affected and only with court approval, through a motion to the court with a description for the basis of the change. For more information on modifications to funding, please refer to Section 7.3.1.

- 5-52 Comment:** Commenters expressed support for the inclusion of the “Reduce Gulf of Mexico commercial red snapper or other reef fish discards through an IFQ subsidy program” restoration approach as part of the Fish and Water Column Invertebrates Restoration Type.

**Response:** The Trustees acknowledge the support for the “Reduce Gulf of Mexico commercial red snapper or other reef fish discards through an IFQ subsidy program” restoration approach as part of the Fish and Water Column Invertebrates Restoration Type.

- 5-53 Comment:** A commenter expressed support for restoration approaches to reduce bycatch as part of the Fish and Water Column Invertebrates Restoration Type and suggested including vessel replacement as part of these restoration approaches.

**Response:** The Trustees acknowledge and agree that reducing bycatch is an important part of the restoration portfolio for the Fish and Water Column Invertebrates Restoration Type. Based on the recommendation, the Trustees have revised the “Reduce mortality among highly migratory species and other oceanic fishes” and “Voluntary fisheries-related management actions to increase fish biomass” restoration approaches to include replacing existing vessels

with vessels that could fish with the bycatch-reducing technology as part of the incentives for voluntary participation. Those changes are reflected in Sections 5.D.3.2.1 and 5.D.3.5.1.

**5-54 Comment:** A commenter expressed a great need to focus on fishery restoration and a need for “cooperative research.”

**Response:** In order to address the fish and water column invertebrates and nearshore resources (including shrimp and crabs) that were injured by the DWH incident, the Trustees will implement a portfolio of restoration approaches for these injuries that is three-fold: 1) coastal and nearshore habitat restoration, discussed and implemented under the Wetlands, Coastal, and Nearshore Habitats Restoration Type (Section 5.5.2), SAV Restoration Type (Section 5.5.8), and Oysters Restoration Type (Section 5.5.9); 2) offshore habitat restoration, discussed and implemented under the Mesophotic and Deep Benthic Communities Restoration Type (Section 5.5.13); and 3) mortality reduction, accomplished by addressing known sources of mortality to fish and invertebrates by reducing bycatch and fisheries interactions discussed and implemented under this Restoration Type (Section 5.5.6). Implementing this portfolio of restoration approaches provides a robust, comprehensive solution to addressing the range of injured water column species (including shrimp and crabs) and life stages. This restoration portfolio also includes monitoring to inform restoration decision-making. For the Fish and Water Column Invertebrates Restoration Type, monitoring and adaptive management of water column restoration projects will rely heavily on existing and expanded fishery observer programs and other fishery-dependent data, given the connection between this Restoration Type and existing fishery management efforts. In addition, these efforts will involve collaborating with Gulf scientists, fishery managers, and the fishing industry as well as building on existing research and monitoring efforts as appropriate for informing restoration decision-making. Monitoring and scientific support may be conducted to improve understanding of the status and trends of key water column resources and to better define the effectiveness of bycatch reduction and bycatch mortality reduction approaches for species intended for restoration. In addition to providing information needed to adaptively manage restoration actions, these additional data collection efforts may provide fisheries managers with better information on which to make management decisions, which could provide further benefit to the species targeted for restoration. For additional information on monitoring for the Fish and Water Column Invertebrates Restoration Type, please refer to Section 5.5.6.4.

**5-55 Comment:** A commenter suggested that “methods to address illegal, unreported, and unregulated fishing in the Gulf of Mexico should be included” as a restoration approach.

**Response:** The Trustees revised the restoration approach “Enhance Development of Bycatch Reducing Technologies” to “Voluntary Fisheries-Related Actions to Increase Fish Biomass” in order to add a technique that could include opportunities for increasing fish biomass through the development of new mechanisms to reduce illegal, unreported, and unregulated fishing in the Gulf of Mexico. This restoration approach is described in Section 5.D.3.5.

**5-56 Comment:** A commenter suggested considering Gulf sturgeon restoration projects in Florida's rivers.

**Response:** The Trustees acknowledge the specific location recommendations for sturgeon, but decisions about location will be part of future project specific restoration plans.

- 5-57 Comment:** A commenter suggested considering Gulf sturgeon restoration projects that reduce incidental bycatch mortality in nearshore trawls.

**Response:** Bycatch reduction is a common conservation practice implemented on behalf of other resources; therefore, these types of restoration approaches are included for other Restoration Types. However, the Trustees did not identify restoration approaches to reduce incidental bycatch mortality for Gulf sturgeon because bycatch mortality of Gulf sturgeon in nearshore trawls is not well understood. As described in Appendix 5.D, as restoration implementation and science in the northern Gulf of Mexico evolves, the Trustees may also update this appendix to ensure the list of restoration approaches reflects the best available to the Trustees throughout the entire lifespan of the PDARP/PEIS implementation. Significant changes to the appendix would be made available to the public for review and comment.

- 5-58 Comment:** A commenter suggested that Gulf sturgeon restoration projects should focus on river systems that host populations injured by the spill.

**Response:** The Trustees concur with prioritizing restoration to populations of Gulf sturgeon that were injured. Restoration project development will focus on those river systems where injury occurred. However, decisions about specific locations will be part of future project specific restoration plans.

- 5-59 Comment:** A commenter suggested that Trustees should assess whether access to riverine habitat is a limiting factor to Gulf sturgeon recovery. Rudd et al. (2014) suggest mortality in non-riverine habitats is a more significant factor in recovery. Since the Gulf Sturgeon Recovery/Management Plan (FWS & GSMFC 1995) lists recovery tasks, and incidental mortality is listed third, with riverine restoration listed fourth, why is incidental mortality reduction not considered over river restoration?

**Response:** The Trustees acknowledge there are many stressors that inhibit Gulf sturgeon recovery. The Gulf Sturgeon Recovery/Management Plan (FWS & GSMFC 1995) provides an excellent summary of where stressors exist, including riverine, estuarine, and marine environments. The Trustees believe that an effective approach to restoring Gulf sturgeon injury is through the reduction of riverine stressors on Gulf sturgeon spawning habitat, such as those identified in the Recovery Plan.

### 8.3.5.5 Sea Turtle Restoration

- 5-60 Comment:** One commenter supports restoring sea turtle populations and habitats. According to the commenter, “it is very important to stress enforcement of turtle excluder device (TED) and other required mitigation measures (long-lines) for those who fish because unfortunately a few cheaters can kill many sea turtles. The commenter strongly encouraged money to be set aside for enforcement of sea turtle regulations. Enforcement money is needed for all Restoration Types because there are people who break the law and take advantage of restoration efforts to kill, destroy, damage, degrade, and profit from protected organisms and habitats of the coast.

The level of enforcement and compliance for coastal protection is not sufficient oftentimes to ensure long-term and maintenance of natural ecological processes, values, and benefits. More resources are needed (money, people, equipment) for enforcement and compliance for the long-term. For instance, the RN Manta, attached to the Flower Garden Banks National Marine Sanctuary, has been limited in its operations due to a lack of money. A fund to provide money to long-term enforcement, monitoring, and compliance would help provide protection in perpetuity.”

**Response:** The Trustees included several restoration approaches that are intended to reduce bycatch of sea turtles and to expand or enhance existing efforts to protect sea turtles, such as “Reduce Sea Turtle Bycatch in Commercial Fisheries Through Enhanced State Enforcement Effort to Improve Compliance with Existing Requirements” (Section 5.D.4.5). For additional information on all of the restoration approaches included for sea turtles, please refer to Section 5.D.4. These restoration approaches expand the Early Restoration project for sea turtles which included Gulf of Mexico Shrimp Trawl Bycatch Reduction and Texas Enhanced Fisheries Bycatch Enforcement as two components of the project that was selected as part of the Phase IV Early Restoration Plan and Environmental Assessment (NOAA & TPW 2015) ([http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454\\_dwh\\_factsheet\\_seaturtle.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454_dwh_factsheet_seaturtle.pdf)). However, it should be noted that restoration that requires the development of new legislation or regulations, or is currently mandated through existing legislation or regulations such as federal enforcement of existing regulations, is outside the scope of NRDA (Section 5.C.4.1).

**5-61 Comment:** Several commenters supported sea turtle restoration, and specifically restoration for Kemp’s ridley sea turtles. There were also suggestions for specific locations where restoration could be implemented.

**Response:** The Trustees acknowledge the need and support for sea turtles as part of the comprehensive, integrated ecosystem restoration portfolio. As part of this settlement, there is \$163 million allocated for sea turtle restoration across all seven geographically defined Restoration Areas. There is particular emphasis on the Open Ocean and Regionwide Restoration Areas, because of the diversity of species and life stages that were injured. The Trustees may use funds allocated to the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among others. This Restoration Type will address the key threats to sea turtles and emphasize activities that are consistent with their recovery plans. These activities are intended to restore for all species and life stages that were injured as a result of the DWH incident. However, the identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans which will also be available for public review and comment. These subsequent plans will consider the needs of each species and life stage as well as other considerations (e.g., geographic and/or fishery characteristics) that are applicable for a project. For additional information on the sea turtle Restoration Type, please refer to Section 5.5.10. The Trustees initiated sea turtle restoration through several Early Restoration

projects to address identified needs for a variety of species and life stages of sea turtles, consistent with recovery plans for sea turtles in the Gulf of Mexico. As part of Phase II Early Restoration the Trustees implemented a project to reduce artificial lighting on nesting beaches. For additional information on this project, please refer to this fact sheet (DWH Trustees 2012): [http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat\\_12-21-12.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat_12-21-12.pdf). In addition, as part of Phase IV Early Restoration, the Trustees selected a sea turtle project with multiple components related to reducing bycatch, stranding response, nest detection and enhancement, and state enforcement. For additional information on this project, please refer to this fact sheet (NOAA & TPW 2015): [http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454\\_dwh\\_factsheet\\_seaturtle.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454_dwh_factsheet_seaturtle.pdf). These Early Restoration projects mean that there is more than \$49 million for sea turtle restoration that is already selected for implementation in addition to the \$163 million allocated in this PDARP/PEIS.

**5-62 Comment:** One commenter supported restoration funds for sea turtle and diamondback terrapin restoration.

**Response:** The Trustees acknowledge the need and support for sea turtles as part of the comprehensive, integrated ecosystem restoration portfolio. As part of this settlement, there is \$163 million allocated for sea turtle restoration across all seven geographically defined Restoration Areas. There is particular emphasis on the Open Ocean and Regionwide Restoration Areas, because of the diversity of species and life stages that were injured. The Trustees may use funds allocated to the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among others. This Restoration Type will address the key threats to sea turtles and emphasize activities that are consistent with their recovery plans. These activities are intended to restore for all species and life stages that were injured as a result of the DWH incident. However, the identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans which will also be available for public review and comment. These subsequent plans will consider the needs of each species and life stage as well as other considerations (e.g., geographic and/or fishery characteristics) that are applicable for a project. For additional information on the sea turtle Restoration Type, please refer to Section 5.5.10. There was no documented injury to diamondback terrapins as a result of the DWH incident; therefore, there is no restoration specifically directed at them. However, the substantial amount of funds that are allocated toward habitat restoration could provide some ancillary benefits to diamondback terrapins depending on the design and location of the specific restoration projects.

**5-63 Comment:** One commenter noted the importance of sea turtles as “part of what makes paddling Florida’s coasts so attractive to our multi-million dollar ecotourism industry.” Therefore, the commenter recommended “spending more money on turtle research, and the nesting areas for this group of animals.” The commenter also suggested plugging “as many leaking oil wells as possible on the bottom of the Gulf; and to stop selling permits for more oil

wells, especially to foreign countries/companies.” Sea turtle projects, in particular projects to benefit Kemp's ridley sea turtles, should be prioritized over inland projects.

**Response:** The Trustees acknowledge the need and support for sea turtles as part of the comprehensive, integrated ecosystem restoration portfolio. As part of this settlement, there is \$163 million allocated for sea turtle restoration across all seven geographically defined Restoration Areas. There is particular emphasis on the Open Ocean and Regionwide Restoration Areas, because of the diversity of species and life stages that were injured. The Trustees may use funds allocated to the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among others. This Restoration Type will address the key threats to sea turtles and emphasize activities that are consistent with their recovery plans. These activities are intended to restore for all species and life stages that were injured as a result of the DWH incident. However, the identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans which will also be available for public review and comment. These subsequent plans will consider the needs of each species and life stage as well as other considerations (e.g., geographic and/or fishery characteristics) that are applicable for a project. For additional information on the sea turtle Restoration Type, please refer to Section 5.5.10. The specific recommendation to plug leaking oil wells is not included as part of this PDARP/PEIS. The Trustees evaluated the feasibility and applicability of restoration options in restoring for injured natural resources, and remediating derelict pipelines and oil wellheads is an example of an option not carried forward. Opportunity for implementing this approach does exist. However, the technical uncertainty in this restoration approach creates questions about the nexus and the net potential benefits. For additional information on the restoration approaches that were considered and not carried forward, please refer to Section 5.C.4.2. The second recommendation to stop selling permits for oil wells is acknowledged but is outside the scope of NRDA and this PDARP/PEIS. The Trustees initiated sea turtle restoration through several Early Restoration projects to address identified needs for a variety of species and life stages of sea turtles, consistent with recovery plans for sea turtles in the Gulf of Mexico. As part of Phase II Early Restoration the Trustees implemented a project to reduce artificial lighting on nesting beaches. For additional information on this project, please refer to this fact sheet (DWH Trustees 2012): [http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat\\_12-21-12.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat_12-21-12.pdf). In addition, as part of Phase IV Early Restoration, the Trustees selected a sea turtle project with multiple components related to reducing bycatch, stranding response, and state enforcement. For additional information on this project, please refer to this fact sheet (NOAA & TPW 2015): [http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454\\_dwh\\_factsheet\\_seaturtle.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454_dwh_factsheet_seaturtle.pdf). These Early Restoration projects mean that there is more than \$49 million for sea turtle restoration that is already selected for implemented in addition to the \$163 million allocated in this PDARP/PEIS.

- 5-64 Comment:** The commenter noted that “sea turtles living in the Gulf of Mexico have been experiencing population declines for years prior to the BP spill. The BP spill only made matters

worse. A significant amount of money should be spent on sea turtles, especially the Kemp's ridley sea turtle. Money should be set aside for turtle conservation, restoration, and support for injured turtles. Money should also be set aside for cleanup efforts in the event of a new spill that threatens turtles and turtle habitat.”

**Response:** The Trustees acknowledge the need and support for sea turtles as part of the comprehensive, integrated ecosystem restoration portfolio. As part of this settlement, there is \$163 million allocated for sea turtle restoration across all seven geographically defined Restoration Areas. There is particular emphasis on the Open Ocean and Regionwide Restoration Areas, because of the diversity of species and life stages that were injured. The Trustees may use funds allocated to the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among others. This Restoration Type will address the key threats to sea turtles and emphasize activities that are consistent with their recovery plans. These activities are intended to restore for all species and life stages that were injured as a result of the DWH incident. However, the identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans which will also be available for public review and comment. These subsequent plans will consider the needs of each species and life stage as well as other considerations (e.g., geographic and/or fishery characteristics) that are applicable for a project. For additional information on the sea turtle Restoration Type, please refer to Section 5.5.10. The Trustees initiated sea turtle restoration through several Early Restoration projects to address identified needs for a variety of species and life stages of sea turtles, consistent with recovery plans for sea turtles in the Gulf of Mexico. As part of Phase II Early Restoration the Trustees implemented a project to reduce artificial lighting on nesting beaches. For additional information on this project, please refer to this fact sheet (DWH Trustees 2012): [http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat\\_12-21-12.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat_12-21-12.pdf). In addition, as part of Phase IV Early Restoration, the Trustees selected a sea turtle project with multiple components related to reducing bycatch, stranding response, and state enforcement. For additional information on this project, please refer to this fact sheet (NOAA & TPW 2015): [http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454\\_dwh\\_factsheet\\_seaturtle.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454_dwh_factsheet_seaturtle.pdf). These Early Restoration projects mean that there is more than \$49 million for sea turtle restoration that is already selected for implemented in addition to the \$163 million allocated in this PDARP/PEIS. The Trustees acknowledge the recommendation to set money aside for cleanup efforts in the event of another spill. However, the restoration effort under this PDARP/PEIS is intended to address the injuries resulting from the DWH incident. OPA provides mechanisms and authorities for oil spill response as part of the National Contingency Plan codified at 40 CFR § 300.

- 5-65 Comment:** The commenter stated that “all restoration projects, including habitat restoration and economic restoration through RESTORE and other funding sources, need to consider the timing of nesting and the availability of undisturbed critical habitat to reduce breeding failures during those important recruitment periods. Although some disturbance of nesting habitat will need to occur during critical periods for restoration, every effort should be made to ensure that

within bioregions, a reasonable amount of breeding habitat for priority and injured species remains available and protected from disturbance. To accomplish this critical outcome, one or more biologists should be on each project planning team to represent birds and sea turtles and to ensure that all necessary care is employed to protect birds regionally during ongoing, Gulf-wide restoration. Birds and sea turtles will benefit in the long-term by large-scale restoration, but also need to be able to reproduce, forage, and rest during critical periods to not sustain further losses as a result of the DWH incident.”

**Response:** This PDARP/PEIS does not select specific projects but rather provides a framework of programmatic goals, Restoration Types, and restoration approaches that will guide and direct the subsequent phases of restoration. However, as part of the NEPA evaluation in Chapter 6, the PDARP/PEIS incorporated best practices organized by species and included a section on general construction measures in the analysis of environmental consequences. These include specific practices related to sea turtles and birds. Specifically for sea turtle nesting, if work must occur on nesting beaches during sea turtle nesting season (May through August): begin work with vehicles or machinery after 9:00 a.m. local time to allow the sea turtle monitoring program to detect and mark new nests and assess the need to relocate sea turtle nests that could be affected by the project construction; avoid marked nests by at least 10 feet (Section 6.A.1.4.3). Specifically for migratory birds: avoid working in migratory bird nesting habitats during breeding, nesting, and fledging (approximately mid-February through late August). If project activities must occur during this timeframe and breeding, nesting, or fledging birds are present, contact the state trust resource agency to obtain the most recent guidance to protect nesting birds or rookeries, and their recommendations will be implemented (Section 6.A.1.1.2). For more information on the best practices for birds, please refer to Section 6.A.1.1 and for sea turtles, please refer to Section 6.A.1.4.

**5-66 Comment:** One commenter supported ecosystem restoration in order to restore sea turtles, fish, corals, and birds. In addition, the commenter suggested continuing “to monitor and clean up what was damaged over the next few decades as these creatures deserve to be there.”

**Response:** The Trustees have identified a comprehensive, integrated ecosystem restoration portfolio in order to restore for the range of injuries that occurred as a result of the DWH incident. The Trustees conclude that this combination of efforts will work synergistically to restore for the full range of assessed injuries caused by this spill. By conducting restoration for both targeted species in the vast Gulf of Mexico food web and the habitats on which they rely, ecological linkages such as habitat-community-species interactions, predator-prey relationships, nutrient transfer and cycling, and organism migration and behavior may also feasibly be restored. The ecosystem approach to the restoration portfolio also includes a commitment to monitoring and adaptive management that accommodates the dynamics of ecosystems and new knowledge on how they respond, as well as providing continuous oversight and rigorous planning. Adaptive management will also be used to address currently unknown injuries that may be uncovered in the future. In this manner, the Trustees provide for a flexible, science-based approach to ensuring that the restoration portfolio provides long-term benefits to the resources and services injured by the spill in the manner envisioned in this programmatic plan.

**5-67 Comment:** One commenter recommended prioritizing funding to sea turtles, in particular Kemp's ridley, and other endangered species that are “struggling to survive from the lasting effects of the oil spill. These turtles, like other animals, are still dealing with toxic residues and environmental damage, along with decimated populations. These animals depend on the ecosystems damaged from the spill.”

**Response:** As part of the comprehensive, integrated, ecosystem restoration portfolio, the Trustees allocated restoration funds across Restoration Types, making investments Regionwide, in the Open Ocean, and throughout all five Gulf states to restore coastal and nearshore habitats, improve water quality in priority watersheds, protect and restore living coastal and marine resources, and enhance recreational use opportunities. By making investments across resource groupings and supporting habitats, the Trustees will ensure that the public is appropriately compensated for all the resources and services injured by the spill. The Trustees believe that coastal and nearshore habitat restoration is the most appropriate and practicable mechanism for restoring the ecosystem-level linkages disrupted by this spill. As ecologically significant as these coastal and nearshore habitats are, however, aspects of this vast and diverse injury will require additional restoration, especially to those resources that spend some or all of their lives in the open waters of the Gulf of Mexico. Therefore, this plan also calls for restoration, focused on specific resource groups including fish and water column invertebrates, marine mammals, sea turtles, sturgeon, and mesophotic and deep benthic communities, which will directly support the recovery of these vital resources. The Trustees acknowledge the need and support for sea turtles as part of the comprehensive, integrated ecosystem restoration portfolio. As part of this settlement, there is \$163 million allocated for sea turtle restoration across all seven geographically defined Restoration Areas. There is particular emphasis on the Open Ocean and Regionwide Restoration Areas, because of the diversity of species and life stages that were injured. The Trustees may use funds allocated to the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among others. This Restoration Type will address the key threats to sea turtles and emphasize activities that are consistent with their recovery plans. These activities are intended to restore for all species and life stages that were injured as a result of the DWH incident. However, the identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans which will also be available for public review and comment. These subsequent plans will consider the needs of each species and life stage as well as other considerations (e.g., geographic and/or fishery characteristics) that are applicable for a project. For additional information on the sea turtle Restoration Type, please refer to Section 5.5.10. The Trustees initiated sea turtle restoration through several Early Restoration projects to address identified needs for a variety of species and life stages of sea turtles, consistent with recovery plans for sea turtles in the Gulf of Mexico. As part of Phase II Early Restoration the Trustees implemented a project to reduce artificial lighting on nesting beaches. For additional information on this project, please refer to this fact sheet (DWH Trustees 2012): [http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat\\_12-21-12.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/ImprovedHabitat_12-21-12.pdf). In addition, as part of Phase IV Early Restoration, the Trustees selected a sea turtle project with multiple components related to

reducing bycatch, stranding response, and state enforcement. For additional information on this project, please refer to this fact sheet (NOAA & TPW 2015):

[http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454\\_dwh\\_factsheet\\_seaturtle.pdf](http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/150454_dwh_factsheet_seaturtle.pdf). These Early Restoration projects mean that there is more than \$49 million for sea turtle restoration that is already selected for implemented in addition to the \$163 million allocated in this PDARP/PEIS.

### 8.3.5.6 Marine Mammal Restoration

**5-68 Comment:** Several commenters expressed support for marine mammal restoration, and stated that the Trustees should ensure that “marine mammal restoration and monitoring activities are designed and implemented to maximize recovery and minimize additional stress on impacted stocks.”

**Response:** The Trustees acknowledge the need and support for marine mammal restoration. As part of the comprehensive, integrated ecosystem restoration portfolio, the Trustees allocated \$144 million to the marine mammal Restoration Type. The funds are allocated across Florida, Alabama, Mississippi, Louisiana, Open Ocean, and Regionwide Restoration Areas, with particular emphasis on the Louisiana, Open Ocean, and Regionwide Restoration Areas. The Trustees place the majority of funds for marine mammals in these three Restoration Areas to reflect the diversity of species injured and the geographic distribution of the injury. The Trustees may additionally use funds in the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among others. The planning and implementation considerations acknowledge the need to coordinate and collaborate with state resource managers, other federal agencies, and stakeholders to implement the restoration approaches. This coordination will help identify, develop, and implement effective solutions to maximize marine mammal benefits. Although the scale of restoration needed is unprecedented, many of the restoration approaches are routinely conducted across the United States as part of existing management activities to help conserve, protect, and recover marine mammals. In addition, adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. A strong emphasis on data collection and monitoring for marine mammals will inform the public and Trustees on the state of the resource and iteratively guide restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident. For additional information on the marine mammal Restoration Type, please refer to Section 5.5.11.

**5-69 Comment:** The commenter stated that “the amount of funding allocated for the restoration of marine mammals, and the restoration approaches considered for these species, seem paltry and insufficiently evaluated given the damages to marine mammals outlined in the injury assessment chapter, which are compounded in the context of previously depleted populations due to whaling and human impacts so severe that special federal legislation was passed to protect them (the Marine Mammal Protection Act). One pelagic species of marine mammal in the Gulf is protected under the Endangered Species Act, the sperm whale. Estimating damage to

the sperm whale population and proposing methods of restoration for it and its habitat must certainly be challenging given how very little is known about sperm whale life history or physiology, or about rates of global recovery from whaling. More is known about the damage to bottlenose dolphin populations in the Barataria-Terrebonne estuaries, and the Trustees' assumptions related to similar toxicity impacts affecting sperm whales and other species of marine mammals in the Gulf are reasonable."

**Response:** The Trustees acknowledge that there are entirely logical and appropriate suggestions for alternative ways to allocate the funds. This comment indicates a preference for Alternative B: Resource-Specific Restoration, which would put more money into specific animal species and less money into the ecosystem or habitat-based Restoration Types. However, the Trustees have determined that the best way to restore for all of the injuries that occurred as a result of the DWH incident is a comprehensive, integrated ecosystem approach toward implementing the restoration with the intent of enhancing the connectivity and productivity of habitats and resources, which will help sustain restoration gains over the long term. The recognition of the key role of coastal habitats in the interconnected Gulf of Mexico ecosystem helps ensure that multiple resources will benefit from restoration and that reasonably inferred but unquantified injuries are likely to be addressed.

For marine mammals specifically, the Trustees recognize that the diverse number of species and geographic range of marine mammals affected by the spill is unprecedented, and therefore a portfolio of restoration approaches is needed to collectively address all stocks, species, and geographic areas injured by the spill. This portfolio includes ecological benefits achieved through habitat restoration, in addition to the restoration that will be implemented for the Marine Mammal Restoration Type, which includes restoration approaches that address direct sources of mortality and morbidity, spatial planning, and robust monitoring. The Trustees allocated funds for marine mammals across the Florida, Alabama, Mississippi, Louisiana, Open Ocean, and Regionwide Restoration Areas, with particular emphasis on the Louisiana, Open Ocean, and Regionwide Restoration Areas. The Trustees place the majority of funds for marine mammals in these three Restoration Areas to reflect the diversity of species injured and the geographic distribution of the injury. The Trustees may additionally use funds in the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico, as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among other activities. In Section 5.10.3, "Sense of Restoration Potential by Restoration Type," the Trustees provided examples to convey a sense of the magnitude of restoration that could be implemented with the funding provided, by Restoration Type.

Rather than attempt to assign a dollar value to lost resources, the Trustees 1) quantified injury by using metrics that best characterized injuries to each specific resource and 2) recommended approaches to best restore Gulf resources. The recommended comprehensive integrated ecosystem restoration plan then looks at Gulf resources holistically, with the goal to improve and maintain healthy marine habitats and resources (including marine mammals), increase public access to these resources, and enhance the quality of recreational activities.

**5-70 Comment:** Several commenters supported including robust monitoring and adaptive management as part of the restoration portfolio for marine mammals since direct restoration options are more limited for these resources. “In general, restoration monitoring plans should be interdisciplinary and inter-institutional, with monitoring goals and long-term stable funding identified at the outset. Plans should include monitoring of key physical, biological, and ecological parameters before, during, and after restoration activities. Biological and ecological monitoring should include regular, systematic, and long-term surveys of a broad range of representative marine species, including plants, invertebrates, fish, birds, sea turtles, and marine mammals. Such surveys should be conducted at sufficient levels of effort and frequency to allow detection of changes with a high level of confidence. Enhanced monitoring of impacted marine mammal stocks, and the integration of newly collected information with existing databases and data sets, can help to focus marine mammal restoration activities and assess their effectiveness over the long term. It also can assist in identifying unintended and potentially adverse effects of habitat restoration activities on marine mammals. It was recommended that the Trustees use, support, and expand existing marine mammal monitoring programs in all areas of the Gulf as the basis for an integrated, long-term approach to monitoring the restoration of marine mammals.”

**Response:** Given the scope and magnitude of restoration remaining to be conducted, the Trustees developed the PDARP/PEIS to clearly set before the public a nested framework of programmatic goals, Restoration Types, and restoration approaches that will guide and direct the subsequent phases of restoration. Those subsequent phases of restoration will identify, evaluate, and select specific restoration projects for implementation that are consistent with the restoration framework laid out by the PDARP/PEIS. To most effectively address the extent of injury to marine mammals across the diverse geographic range they occupy, a combination of several approaches will need to be implemented to provide a portfolio of restoration approaches that collectively will allow populations to recover more quickly or reduce further harm from acute and chronic injuries sustained by the DWH incident. This restoration portfolio includes restoration approaches designed to decrease and mitigate interactions with commercial and recreational fishing gear, characterize and reduce impacts from noise, reduce harm from industrial activities, reduce illegal feeding and harassment, and increase understanding of causes of marine mammal illness and death. Thus, the portfolio will enable early detection of and intervention in anthropogenic and natural threats, such as disease outbreaks or harmful algal blooms. The restoration portfolio for marine mammals will also include robust monitoring and scientific support for an adaptive management approach to restoration planning and implementation. Adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. A strong emphasis on data collection and monitoring for marine mammals will inform the public and Trustees on the state of the resource and iteratively guide restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident. Specifically, information is needed to 1) better characterize stock structure; 2) monitor population health; 3) understand and map spatiotemporal distributions of marine mammals; 4) identify, map, and rank the relative influence of anthropogenic stressors by geographic area and stock; and 5) prioritize those stocks

in need of additional restoration, adaptive management, or conservation actions using spatial planning tools. For additional information on the marine mammal Restoration Type, please refer to Section 5.5.11.

- 5-71 Comment:** Commenter(s) noted that “populations of marine mammals have been damaged, and direct research needs to be supported by these funds. Scientists need to be actively monitoring the remaining oil, bacterial effects on pollutants, and other issues that have been uncovered in the aftermath of the disaster.”

**Response:** Given the scope and magnitude of restoration remaining to be conducted, the Trustees developed the PDARP/PEIS to clearly set before the public a nested framework of programmatic goals, Restoration Types, and restoration approaches that will guide and direct the subsequent phases of restoration. Those subsequent phases of restoration will identify, evaluate, and select specific restoration projects for implementation that are consistent with the restoration framework laid out by the PDARP/PEIS. To most effectively address the extent of injury to marine mammals across the diverse geographic range they occupy, a combination of several approaches will need to be implemented to provide a portfolio of restoration approaches that collectively will allow populations to recover more quickly or reduce further harm from acute and chronic injuries sustained by the DWH incident. This restoration portfolio includes restoration approaches designed to decrease and mitigate interactions with commercial and recreational fishing gear, characterize and reduce impacts from noise, reduce harm from industrial activities, reduce illegal feeding and harassment, and increase understanding of causes of marine mammal illness and death. Thus, the portfolio will enable early detection of and intervention in anthropogenic and natural threats, such as disease outbreaks or harmful algal blooms. The restoration portfolio for marine mammals will also include robust monitoring and scientific support for an adaptive management approach to restoration planning and implementation. Adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. A strong emphasis on data collection and monitoring for marine mammals will inform the public and Trustees on the state of the resource and iteratively guide restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident. For additional information on the marine mammal Restoration Type, please refer to Section 5.5.11.

- 5-72 Comment:** The commenter stated that “specifically, in addressing the restoration of marine mammals, the Draft PDARP/PEIS included the following statements regarding spatial planning, which the commenter interprets to convey the same intent as CMSP or other language that could lead to zoning efforts that would be beyond the context and scope of the process underway. The specific examples from the Draft PDARP/PEIS were:

- Recovery of marine mammals “necessitates a portfolio of restoration approaches that...includes...spatial planning...”
- “Critical needs for identifying priority threats include...spatial planning.”

- “Monitoring and scientific support for adaptive management of restoration approaches would include...development of spatial planning information management tools (e.g. GIS maps, databases, and statistical models)...”
- “...information is needed to...prioritize those [marine mammal] stocks in need of additional restoration, adaptive management, or conservation actions using spatial planning tools.”
- “Updated information with finer spatiotemporal resolution is needed to develop and distribute more accurate spatial planning and decision support tools to further inform restoration, define restoration activities, and monitor the effectiveness of all the restoration activities.”
- “There could be efficiencies in developing spatial planning tools by coordinating with other efforts such as sea turtle geospatial planning.”

The Draft PDARP/PEIS further notes that one goal of marine mammal restoration would be to implement an integrated portfolio of restoration approaches, one of which is the measurement of noise to improve knowledge and reduce impacts of anthropogenic noise on marine mammals. In another example where the PDARP/PEIS moves beyond the limited scope and purpose of the NRDA process underway, it is further noted that this approach “may involve...implementing spatial planning and decision support tools” and that the combination of information on marine mammals and their habitats “will be incorporated into...spatial planning tools for use in environmental impact assessment, operational planning, and permitting by federal agencies.”

**Response:** The Trustees recognize there are different definitions for “spatial planning,” and did not intend spatial planning to be interpreted to convey the same intent as CMSP. In this context, the Trustees consider spatial planning for marine mammals to be the activities that protected resource managers take to identify areas of high spatiotemporal importance for marine mammals, in particular to help Trustees identify potential target locations for restoration projects. In order to avoid confusion, the Trustees have revised “spatial planning” to be “spatiotemporally explicit management tools” in Section 5.5.11 and Section 5.D.5.4.

**5-73 Comment:** The commenter stated that “animals and mammals are living souls. They are not things they are not objects. Yet they mourn, they love. They dance. They suffer. They know the peaks and chasms of being. With us they share in the gifts of consciousness and life.”

**Response:** The Trustees acknowledge the comment.

**5-74 Comment:** Several commenters indicated the importance of including monitoring as part of the restoration portfolio for marine mammals. There were specific recommendations on data needs, resource needs, education and outreach, and existing programs that could inform NRDA monitoring for marine mammals.

**Response:** The Trustees acknowledge the need and support for marine mammal restoration with an emphasis on monitoring. As part of the comprehensive, integrated ecosystem restoration portfolio, the Trustees allocated \$144 million to the Marine Mammal Restoration

Type. The funds are allocated across the Florida, Alabama, Mississippi, Louisiana, Open Ocean, and Regionwide Restoration Areas, with particular emphasis on the Louisiana, Open Ocean, and Regionwide Restoration Areas. There is a strong emphasis on data collection and monitoring in the marine mammal restoration portfolio in order to inform the public and Trustees on the state of the resource and iteratively guide restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident. In addition, adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. The Trustees also acknowledge the need and support for building upon existing programs for marine mammal restoration. Although specific projects are not identified in this PDARP/PEIS, the planning and implementation considerations for the Marine Mammal Restoration Type and the restoration approaches describe the need to coordinate and build upon existing efforts in a way that meets the Trustees' obligations under OPA. This also includes education and outreach efforts to engage people in marine mammal restoration. The Trustees acknowledge the specific location and resource recommendations, but identifying specific monitoring parameters and methods will be part of future project specific restoration plans.

- 5-75 Comment:** Several commenters supported the designation of MPAs for marine mammals, especially for offshore species such as sperm whales, since other restoration approaches targeting these species are limited. These comments also provided specific recommendations on the type and locations for this type of MPA.

**Response:** This PDARP/PEIS provides a framework of programmatic goals, Restoration Types, and restoration approaches that will guide the subsequent phases of restoration. The identification and selection of restoration projects and locations are decisions that will be part of subsequent project-specific restoration plans which will also be available for public review and comment. The Trustees included establishing protections for multiple Restoration Types including Marine Mammals under the restoration approach "Protect and Conserve Marine, Coastal, Estuarine, and Riparian Habitats" (Section 5.D.1.7). The Trustees acknowledge the specific location recommendations for marine mammals, but decisions about location will be part of future project specific restoration plans.

- 5-76 Comment:** One commenter noted that a "marine mammal restoration approach is the protection and conservation of marine, coastal, estuarine, and riparian habitat. The Draft PDARP/PEIS described that establishment or expansion of protections for marine areas (marine protected areas) as a technique that could be employed."

**Response:** The Trustees acknowledge the comment.

- 5-77 Comment:** Commenters noted that there is "uncertainty about the "current levels of human-caused mortality and serious injury for this [sperm whale] stock" and bottlenose dolphin stocks. These human interactions and stressors are potential population controls that could either interfere with recovery or bolster recovery efforts if reduced. Further research and monitoring efforts would fill important gaps in understanding how and where stressors are interacting with whale and dolphin populations and how they can be addressed in restoration plans. Other

whale species, such as Bryde’s whales, occur in small populations in the Gulf that are “highly susceptible to stochastic, or unpredictable, processes and genetic effects that can reduce productivity and resiliency to perturbations...the capability of the Bryde’s whale population to recover from this injury is unknown.” Long-term monitoring is imperative to understanding the population status and trends of Bryde’s whales and the environmental and human factors that are driving population trends.”

**Response:** The Trustees acknowledge and agree that monitoring and adaptive management are important components of the marine mammal restoration portfolio. Given the protected status of marine mammals in the Gulf of Mexico, the extent of their injuries, and the limited scientific data available to inform restoration efforts, robust monitoring and adaptive management is required to ensure restoration is effective at recovering marine mammal stocks from injury. Specifically, information is needed to 1) better characterize stock structure; 2) monitor population health; 3) understand and map spatiotemporal distributions of marine mammals; 4) identify, map, and rank the relative influence of anthropogenic stressors by geographic area and stock; and 5) prioritize those stocks in need of additional restoration, adaptive management, or conservation actions using spatial planning tools. For additional information on monitoring for marine mammals, please refer to Section 5.5.11.4.

**5-78 Comment:** Commenters indicated that the restoration approaches included for marine mammals are actions already required by NOAA and do not address the offshore species of marine mammals, such as sperm whale, that were injured.

**Response:** The Marine Mammal Restoration Type will address stressors that cause mortality (death) and morbidity (illness that reduces fitness) to marine mammal stocks. To most effectively address the extent of injury to marine mammals across the diverse geographic range they occupy, a combination of several approaches will need to be implemented to provide a portfolio of restoration approaches that collectively will allow populations to recover more quickly or reduce further harm from acute and chronic injuries sustained by the DWH incident. This restoration portfolio includes restoration approaches designed to decrease and mitigate interactions with commercial and recreational fishing gear, characterize and reduce impacts from noise, reduce harm from industrial activities, reduce illegal feeding and harassment, and increase understanding of causes of marine mammal illness and death. Thus, the portfolio will enable early detection of and intervention in anthropogenic and natural threats such as disease outbreaks or harmful algal blooms. The restoration approaches that address mortality and morbidity are based on existing management activities that are established under the MMPA, ESA, and priorities for marine mammal conservation. By addressing known threats to marine mammals and building on existing priorities, the Trustees can ensure that the likelihood of success is increased, especially given the limited precedent in restoring for these resources. The restoration portfolio for marine mammals will also include robust monitoring and scientific support for an adaptive management approach to restoration planning and implementation. Adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. A strong emphasis on data collection and monitoring for marine mammals will inform the public

and Trustees on the state of the resource and iteratively guide restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident.

- 5-79 Comment:** Commenters indicated that the restoration approaches included for marine mammals are not sufficient for addressing the impacts to marine mammals caused by the DWH incident.

**Response:** The Trustees disagree that there is no active restoration for marine mammals included in the PDARP/PEIS. However, they also acknowledge that there are many uncertainties associated with marine mammal restoration at this scale and for the diverse number of species affected by the spill. These species are long-lived and slow to reproduce and have an important role in the food web as apex predators. All these factors affect the recovery of marine mammals and necessitate a portfolio of restoration approaches that collectively address all stocks, species, and geographies that were injured by the spill. This portfolio includes ecological benefits, achieved through habitat restoration, that address direct sources of mortality and morbidity; spatial planning; and robust monitoring of populations, health statuses, and trends. This portfolio of restoration approaches will restore for marine mammals by addressing stressors that cause mortality (death) and morbidity (illness that reduces fitness) to marine mammal stocks. The restoration portfolio for marine mammals will also include robust monitoring and scientific support for an adaptive management approach to restoration planning and implementation. Adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. A strong emphasis on data collection and monitoring for marine mammals will inform the public and Trustees on the state of the resource and iteratively guide restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident.

- 5-80 Comment:** Commenters indicated that the restoration approaches included for marine mammals such as supporting stranding networks were not sufficient for addressing the impacts to marine mammals, especially the offshore species such as sperm whales.

**Response:** The Trustees acknowledge and agree that restoring for offshore species of marine mammals is unprecedented and there are uncertainties associated with the restoration approaches. The Trustees identified a portfolio of restoration approaches because of the diversity of species that were affected. Therefore, restoration approaches may be more applicable to some species than others, but when taken in total the Trustees believe that the portfolio of restoration approaches will address the affected species across a wide geographic range. However, the uncertainties associated with marine mammal restoration is also why the restoration portfolio for marine mammals will include robust monitoring and scientific support for an adaptive management approach to restoration planning and implementation. Adaptive management is necessary because of the limited experience implementing restoration for marine mammals at this scale and limited scientific data on impacts for these species. A strong emphasis on data collection and monitoring for marine mammals will inform the public and Trustees on the state of the resource and iteratively guide restoration toward effective projects and subsequent recovery from injuries associated with the DWH incident.

**5-81 Comment:** Commenters expressed that the amount of funding to be allocated to marine mammals across all Restoration Areas was too low. They expressed particular concern with the amounts allocated within the Florida and Alabama Restoration Areas and the amount available for offshore species restoration. Some commenters were concerned with the marine mammal allocation based on a comparison with the allocation to lost user days (recreational use). Some commenters questioned whether the value of dolphins to wildlife watchers was factored into the injury as part of establishing the restoration allocation.

**Response:** The Trustees acknowledge that there are entirely logical and appropriate suggestions for alternative ways to allocate the funds. This comment indicates a preference for Alternative B: Resource-Specific Restoration, which would put more money into specific animal species and less money into the ecosystem- or habitat-based Restoration Types. However, the Trustees have determined that the best way to restore for all of the injuries that occurred as a result of the DWH incident is a comprehensive, integrated ecosystem approach with the intent of enhancing the connectivity and productivity of habitats and resources, which will help sustain restoration gains over the long term. The recognition of the key role of coastal habitats in the interconnected Gulf of Mexico ecosystem helps to ensure that multiple resources, including marine mammals, will benefit from restoration and that reasonably inferred but unquantified injuries are likely to be addressed.

For marine mammals specifically, the Trustees recognize that the diverse number of species and geographic range of marine mammals affected by the spill is unprecedented, and therefore a portfolio of restoration approaches is needed to collectively address all stocks, species, and geographic areas injured by the spill. This portfolio includes ecological benefits achieved through habitat restoration (Section 5.52, Restoration Type: Wetlands, Coastal and Nearshore Habitats), in addition to the restoration that will be implemented for the Marine Mammal Restoration Type, which includes restoration approaches that address direct sources of mortality and morbidity, spatial planning, and robust monitoring. The Trustees allocated funds for marine mammals across the Florida, Alabama, Mississippi, Louisiana, Open Ocean, and Regionwide Restoration Areas, with particular emphasis on the Louisiana, Open Ocean, and Regionwide Restoration Areas. The Trustees place the majority of funds for marine mammals in these three Restoration Areas to reflect the diversity of species injured and the geographic distribution of the injury. The Trustees may additionally use funds in the Regionwide and Open Ocean Restoration Areas for restoration outside the Gulf of Mexico, as ecologically appropriate, and these funds may be used for resource-level planning, prioritization, implementation, and monitoring for resource recovery, among other activities.

With respect to a comment on whether value the value of dolphins to wildlife watchers was considered, the Trustees note that, rather than attempting to assign a dollar value to lost resources and services, the Trustees 1) quantified injury by using metrics that best characterized injuries to each specific resource and 2) recommended approaches to best restore Gulf resources. The recommended comprehensive integrated ecosystem restoration plan then looks at Gulf resources holistically, with the goal to improve and maintain healthy marine habitats and resources (including marine mammals), increase public access to these resources, and enhance

the quality of these recreational activities. In Section 5.10.3, “Sense of Restoration Potential by Restoration Type,” the Trustees provided examples to convey a sense of the magnitude of restoration that could be implemented with the funding provided, by Restoration Type.

The Trustees note that the comparison of the marine mammal allocation to the recreational use allocation is not relevant; the key question the Trustees must address is whether the funding for each resource is sufficient to address injury to that resource, and the Trustees believe the funds allocated for marine mammals in each Restoration Area, coupled with the benefits to marine mammals via the integrated restoration portfolio, are adequate and reasonable.

### 8.3.5.7 Bird Restoration

**5-82 Comment:** Commenters suggested specific areas to consider for bird restoration actions and specific details to consider when implementing restoration planning, implementation and monitoring. Other suggestions included managing beach vegetation strategically across bays and regions by a central entity and highlighting bay island restoration more prominently.

**Response:** The Trustees acknowledge the support for bird restoration as part of a comprehensive, integrated ecosystem restoration portfolio. Given the scope and magnitude of restoration remaining to be conducted, the Trustees are undertaking this next step of restoration planning at a program level. The Trustees developed this PDARP/PEIS to clearly set before the public a nested framework of programmatic goals, Restoration Types, and restoration approaches that will guide the subsequent phases of restoration. Those subsequent phases of restoration will identify, evaluate, and select specific restoration projects for implementation that are consistent with the restoration framework laid out by this PDARP/PEIS. It is within those project-specific restoration plans that specific restoration techniques and locations will be identified. The Trustees appreciate the additional project-level detailed suggestions submitted and will consider the specific recommendations in the development of proposed projects, such as key habitats for bird loafing and roosting areas. Additionally, the Trustees will incorporate best available science in the overall selection and design of restoration actions addressing injuries. The Trustees also recognize the importance and value of implementing multiple restoration approaches and/or techniques at project sites, as applicable, to achieve maximum benefits.

**5-83 Comment:** One commenter recommended including bay island restoration explicitly as a restoration approach (or specified within “create, restore, and enhance barrier and coastal islands and headlands”), and adding a goal to promote bird and habitat stewardship, education, and outreach.

**Response:** The Trustees recognize the importance of bay islands as nesting habitat for birds injured by the spill. These islands, termed “coastal” islands, and the functions and services they provide to injured bird species, are part of the “Create, Restore, and Enhance Barrier and Coastal Islands and Headlands” restoration approach. In addition, promoting bird and habitat stewardship, education, and outreach is included as part of the “Restore and Conserve Bird Nesting and Foraging Habitat” restoration approach. For additional information on these restoration approaches, refer to Sections 5.D.1.4 and 5.D.1.6.

**5-84 Comment:** One commenter supported the three goals for restoring birds and recommended adding “ongoing coastal development and new coastal development in response to migration of human populations because of climate change” to the list of threats facing birds (Section 5.5.12), as these are significant and likely increasing threats to their populations. Additionally, the commenter suggested specifying loafing and roosting habitat in the list of habitats that should be restored or protected.

**Response:** The list of potential threats to bird species injured by the spill included in Section 5.5.12.2 is not intended to be exclusive. The Trustees agree that coastal development can lead to threats to these species such as coastal bird habitat alteration and increased disturbance, which are both included in the threats discussed.

### 8.3.5.8 Mesophotic and Deep Benthic Restoration

**5-85 Comment:** Several commenters expressed support for protecting mesophotic and deepsea corals, specifically the Pinnacle Trend, through establishing or expanding MPAs.

**Response:** The Trustees included “Protect and Manage Mesophotic and Deep Benthic Coral Communities” as a restoration approach. This restoration approach could include the use of the National Marine Sanctuaries Act to designate a new sanctuary or expand an existing sanctuary to include mesophotic and deep benthic communities that were injured by the DWH incident. For additional information on the “Protect and Manage Mesophotic and Deep Benthic Coral Communities” restoration approach, please refer to Section 5.D.7.2.

**5-86 Comment:** One commenter noted that restoration for mesophotic and deep benthic communities should focus on actively managing valuable communities to protect against multiple threats. “In stating that ‘spatially based management provides a framework for addressing key threats,’ the Draft PDARP/PEIS notes that marine protected areas ‘can restrict oil and gas activities, limit types of fishing gear, restrict anchoring...’ Further expanding on the mesophotic and deep benthic community protection/management restoration approach, the Draft PDARP/PEIS notes that establishing protections could include expanding existing management or designating new areas for management and that ‘projects that manage and prevent future injuries from known threats can often have more certain outcomes and be more cost-effective than projects designed to create these resources.’ In discussing implementation considerations, it references federal statutes and mechanisms, including the National Marine Sanctuaries Act, Antiquities Act, no-activity zones, and habitat areas of particular concern.”

**Response:** The Trustees acknowledge the comment.

**5-87 Comment:** Commenter(s) recommend removing the “reference to the potential use of the Antiquities Act to establish protected areas. The need for doing so is underscored by language in the Draft PDARP/PEIS noting the continuing availability of public comment opportunities to ensure public participation and engagement in restoration activities. Recent developments in the Northeast have highlighted deficiencies in transparency and public engagement surrounding potential Antiquities Act designations and the fact that the Antiquities Act does not include public comment and engagement requirements. In making protection of coastal, estuarine, and

riparian habitats and mesophotic and deep benthic communities the focus of restoration approaches, marine protected areas are the sole mechanism for action. The basis for including MPAs is that mesophotic and deep benthic communities ‘would particularly benefit from a preventive restoration project because they are sessile and therefore susceptible to threats such as oil and gas activities, fishing activities, and marine debris.’ Given the limited scope and purpose of the NRDA process underway, such statements and related recommendations that could be used to influence or establish policy, regulations, or other federal decision-making activities should be removed from the PDARP/PEIS. To the extent that marine protected areas are addressed in the final draft, the Trustees should identify them as a potential means to accomplish a particular goal or objective, which would be established through a public process, and not as protection for the sake of protection absent appropriate justification, procedural grounding, and a measurable outcome. Highlighted by the potential for socioeconomic impacts, any decision to establish or expand a marine protected area must be the result of a statutorily authorized, well-informed, and case-by-case process and assessment that considers a range of potential actions (including those not related to marine protected areas), is grounded in sound science and strong user group and public engagement, and avoids predetermined outcomes and judgments. The Draft PDARP/PEIS text should be revised accordingly.”

**Response:** This restoration approach is included because of its ability to meet specific goals described for the Mesophotic and Deep Benthic Communities Restoration Type. The purpose of an MPA is to apply a comprehensive, ecosystem-based approach to conserve marine resources, allow for various uses within its boundaries, provide the flexibility to resolve conflicting use problems, and provide the authority to enforce protections. To implement these types of management actions, the Trustees will follow the administrative processes that are a part of establishing protections including the need to coordinate with multiple stakeholders. Many federal statutes and mechanisms govern the use, management, protection, and conservation of marine areas and marine resources. If this restoration approach is identified and selected in future project-specific restoration plans, the specific mechanism and location will be considered and additional evaluation and public involvement processes will be conducted. In addition, establishing protections is not the only restoration approach for mesophotic and deep benthic communities. The Trustees could also choose to implement the restoration approach “Place Hard Ground Substrate and Transplant Coral.” For more information on these restoration approaches, refer to Section 5.D.7.

### 8.3.5.9 Recreational Use Restoration

**5-88 Comment:** One commenter highlighted that land acquisition, as included under the “Provide and Enhance Recreational Opportunities” Restoration Type, is important.

**Response:** The Trustees acknowledge and agree that land acquisition, included under the restoration approach “Protect and Conserve Marine, Coastal, Estuarine, and Riparian Habitats” (Section 5.D.1.7), could help restore for multiple resources that were injured by the DWH incident. Therefore, the restoration approach was included for consideration under the Restoration Types Wetlands, Coastal, and Nearshore Habitats; Habitat Projects on Federally Managed Lands; Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction

of Sedimentation); Nutrient Reduction (Nonpoint Source); Birds; Sturgeon; Marine Mammals; and Provide and Enhance Recreational Opportunities.

- 5-89 Comment:** A commenter suggested that the Restoration Type “Provide and Enhance Recreational Opportunities” should be revised to add “provide and enhance commercial fishing opportunities” as well.

**Response:** The Trustees acknowledge that many communities and individuals suffered financial and other hardships. Our role as Natural Resource Trustees is to address injuries to the natural environment. Individual and commercial claims are handled separately from this process. However, there will be restoration of fish and water column invertebrates accomplished through restoring habitats and working with fishers to reduce bycatch. This restoration will enhance fish stocks, which in turn will enhance fishing opportunities for recreational and commercial fishers.

- 5-90 Comment:** One commenter would like recreational and tourism opportunities for the disabled community.

**Response:** The Trustees will ensure that all projects comply with applicable laws regarding people with disabilities in implementing the projects. The Trustees will take under advisement the suggestion of involving those with disabilities in design and implementation of the recreational projects. For example, the Trustees have already identified and selected one project as part of Early Restoration to enhance access for the disabled community. As part of Early Restoration Phase IV, the Trustees selected the Bon Secour NWR Trail Enhancement Project, which included constructing a wheelchair accessible observation platform and adding parking spaces compliant with American Disabilities Act requirements (FWS & NOAA 2015) (<http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/BonSecourFactsheet.pdf>).

- 5-91 Comment:** A commenter stated the Trustees should consider that “the coastal communities are the ones that take the brunt of oil spills predominantly. They’re generally small communities that service millions of people. So when you’re looking at the priorities, please consider that the coastal communities are the ones that are really in need of assistance when these kind of events happen. There’s great emphasis on restoration, which I am fully in support of. We do need to restore the natural habitats, but also the recreational opportunities are also an economic benefit to environments—or to areas such as ours. Galveston heavily relies on tourism, and we know everybody comes here because we have the great natural resources to draw them here. I was dismayed to see that Texas was left out of the ‘Provide and enhance recreational opportunities’ line item. And also I find it a little ironic that the picture here is a Texas Park but we can’t have any of the funding. So, I encourage you to maybe reconsider that allocation and to just focus on the coastal communities as we are the ones that are going to take—have taken the brunt and continue to take the brunt of oil spills, and we face the biggest economic challenges.”

**Response:** The Texas Trustees are in the process of implementing five recreational use projects as part of Phase III Early Restoration. Those projects include \$11 million for two state park

projects (Galveston Island State Park Beach Redevelopment and Sea Rim State Park Improvements) as well as \$7.6 million for three artificial reef projects. Two artificial reef projects will create or expand artificial reef sites within Texas state waters by increasing the amount of reef materials within the permitted area. The third artificial reef project will create a new reef site in the Gulf of Mexico about 67 miles south-southeast of Galveston, Texas, by sinking a ship. The Trustees have determined these Texas recreational use projects adequately address the recreational losses that occurred within the state. In addition, the Trustees recognize ecological restoration can benefit recreational uses by restoring or enhancing the resources available for public enjoyment.

- 5-92 Comment:** Some commenters expressed that Texas should receive additional funding for enhancing recreational use especially because other Gulf States did receive funding for Enhancing Recreational Use. Commenters pointed out that some Texas local governments pay for coastal conservation through user fees on recreational opportunities, such that not providing recreational opportunities will result in a lack of conservation revenue streams. Additionally, recreational opportunities connect tourists to the Gulf and influence behaviors.

**Response:** The Texas Trustees are in the process of implementing five recreational use projects as part of Phase III Early Restoration (<http://www.gulfspillrestoration.noaa.gov/planning-archives/>). Those projects include \$11 million for two state park projects (Galveston Island State Park Beach Redevelopment and Sea Rim State Park Improvements) as well as \$7.6 million for three artificial reef projects. Two artificial reef projects will create or expand artificial reef sites within Texas state waters by increasing the amount of reef materials within the permitted area. The third artificial reef project will create a new reef site in the Gulf of Mexico south-southeast of Galveston, Texas, by sinking a ship. These projects will enhance recreational opportunities such as fishing, diving, wildlife viewing, and camping by expanding or creating recreational opportunities and facilities in two Texas state parks and in the Gulf of Mexico. The Trustees have determined that these Texas recreational use projects adequately address the recreational losses that occurred within the state. In addition, the Trustees recognize that ecological restoration projects in Phase IV and in future restoration plans developed by the Texas TIG will benefit recreational uses by restoring or enhancing the resources available for public enjoyment.

- 5-93 Comment:** Commenters recommended that a greater percentage of Florida's allocation be dedicated to environmental restoration rather than recreation, and that projects be prioritized based on restoration value regardless of location. Commenters noted that improving the Gulf ecosystem will provide indirect benefits to recreation.

**Response:** Florida suffered the highest recreational loss of any of the Gulf states. Restoring this loss has been reflected in early restoration projects in Florida, and this restoration will be continued in the proposed final settlement. However, recognizing the relationship between a healthy ecosystem and recreational value, the PDARP/PEIS (and Consent Decree Appendix 2) directs the highest amount of funding for water quality improvements of any of the Restoration Areas (\$335 million) to the Restoration Area for Florida. In this way, both ecological benefits and restoration of recreational loss can be accomplished.

- 5-94 Comment:** Commenters strongly opposed the allocation of \$85.5 million to the Gulf State Park hotel project.

**Response:** We believe that the word “hotel” is intended to refer to the “Gulf State Park Enhancement Project,” a project aimed at enhancing Gulf State Park, a recreational destination along the Gulf coast in Baldwin County, Alabama. The Project includes dune restoration, trail improvements, interpretative and education centers, and a rebuilt lodge and conference center. The expectation is that the improvements will draw additional visitors to the Alabama coast and improve the quality of visits for all, thus compensating the public for opportunities lost as a result of the oil spill. The Project will dedicate \$85.5 million to improve Gulf State Park, increasing public access to the Park’s varied natural resources to partially compensate for recreational services lost due to natural resource injuries in Alabama. The Project and associated allocation were selected in the June 2014, Phase III Early Restoration Plan and Early Restoration Programmatic Environmental Impact Statement, which was issued as part of the “Early Restoration” in accordance with the early restoration planning process described in that Phase III plan. The Project was already subject to a public comment period as part of preparing the Phase III Early Restoration Plan and Early Restoration Programmatic Environmental Impact Statement. A response to those comments was previously prepared as well, and is included as Chapter 13 of the Phase III Plan, specifically part “13.17.5.2 Gulf State Park Enhancement Project,” which can be found here: <http://www.gulfspillrestoration.noaa.gov/restoration/early-restoration/phase-iii/>.

Therefore, the selection of the early restoration project called the Gulf State Park Enhancement Project has already been completed, after public comments.

### 8.3.5.10 Monitoring and Adaptive Management

- 5-95 Comment:** Commenter(s) expressed support for the monitoring and adaptive management framework as it is laid out in the PDARP/PEIS.

**Response:** The Trustees appreciate the support for the monitoring and adaptive management approach outlined in the document. The Trustees acknowledge and agree that monitoring and adaptive management are important components of a comprehensive, integrated ecosystem restoration portfolio.

- 5-96 Comment:** Commenter(s) provide specific recommendations for future monitoring and adaptive management plans, including long-term monitoring to fully understand the ecosystem-level impacts of the spill for resources with unquantified and/or potentially underestimated injuries and to understand recovery trajectories of affected resources. Commenters also suggested several specific monitoring and scientific support efforts for living coastal and marine resources, including determination of population size, structure, and movement of resources. They also suggested the Trustees better characterize major stressors, to improve understanding of potential restoration interventions prior to project development. One commenter specifically pointed to bird, sea turtles, and marine mammals as examples of species where additional monitoring and/or research could fill gaps in understandings of species populations and key stressors on those populations. In addition, the commenter suggested ongoing monitoring of

residual oil in the deep sea areas closest to the wellhead to evaluate potential ongoing injury from residual oil.

**Response:** The Trustees appreciate the support for the monitoring and adaptive management approach outlined in the document. The Trustees have made a significant commitment to monitoring and adaptive management, including the ability to address any currently unknown future conditions, by investing over \$1.2 billion to evaluate progress toward ecosystem goals and track the health and recovery of injured resources. The Trustees recognize that additional ecological monitoring and other scientific activities may be needed to address key uncertainties or large scientific information gaps that could limit restoration planning and implementation for particular resources. In developing these science and monitoring activities the Trustees will consider specific recommendations received on this PDARP/PEIS. Through the adaptive management approach outlined in the PDARP/PEIS, the Trustees also intend to utilize this science and monitoring information to learn over time which restoration approaches are most effective for each resource and in different environmental settings and improve future project selection and design. However, the Trustees have not identified the specific monitoring and targeted scientific support activities needed to inform NRDA restoration decisions as part of this PDARP/PEIS. Rather the Trustees, via TIGs for each Restoration Area, will propose specific science and monitoring activities to address key uncertainties and fill important information gaps as part of subsequent restoration plans that also propose and select specific projects and locations for restoration implementation. As part of subsequent restoration plans, the Trustees will also design restoration monitoring efforts to evaluate restoration outcomes and benefits to injured resources. The time over which those outcomes will be realized will vary by Restoration Type, such that some Restoration Types will require longer-term monitoring than others. The science and monitoring activities proposed in these future restoration plans will be consistent with the overall monitoring and adaptive management framework outlined in this PDARP/PEIS and will be presented for public review and comment.

The Trustees will also develop Standard Operating Procedures for the monitoring and adaptive management program. In developing those procedures, the Trustees will investigate the best approaches for efficiently and effectively monitoring restoration outcomes across TIGs and across all of the Restoration Types.

**5-97 Comment:** The commenter recommended the use of indicator species, habitats, and ecological functions/services to track overall system recovery.

**Response:** The Trustees acknowledge that using ecological indicators, including indicator species, habitats, and/or functions and services, is a common approach to the overall assessment of ecosystem health. In further development of the monitoring and adaptive management framework, the Trustees will investigate the use of such approaches for tracking recovery and evaluating progress towards meeting ecosystem goals outlined in the PDARP/PEIS.

**5-98 Comment:** Commenter(s) recommend that the Trustees use existing data inventories and reports to help identify monitoring needs, particularly the submitted Ocean Conservancy Report *Charting the Gulf: Analyzing the Gaps in Long-Term Monitoring of the Gulf of Mexico* (Love et al.

2015) and the *Gulf of Mexico Marine Mammal Research and Monitoring Meeting: Summary Report* (Cornish 2015).

**Response:** In developing science and monitoring activities, the Trustees will coordinate with other restoration and science programs as appropriate in the Gulf of Mexico, utilize existing relevant scientific information, and build on existing inventories and reports. The Trustees acknowledge receipt of the reports *Charting the Gulf: Analyzing the Gaps in Long-Term Monitoring of the Gulf of Mexico* (Love et al. 2015) and the *Gulf of Mexico Marine Mammal Research and Monitoring Meeting: Summary Report* (Cornish 2015).

**5-99 Comment:** The commenter expressed concern that the monitoring and adaptive management funds will be used for research that may never be completed or made publicly available.

**Response:** The Trustees understand the importance of accountability and transparency in the monitoring and adaptive management program. The Trustees will be developing protocols to ensure transparency for monitoring and adaptive management activities and the public availability of monitoring data and reports. Monitoring data and research results from the NRDA injury assessment are publicly available through the NOAA DIVER website (NOAA 2016a): <https://dwhdiver.orr.noaa.gov/>. Currently the Trustees make information about NRDA Early Restoration projects publicly available, including project monitoring plans and project monitoring data through the NRDA Early Restoration Project Atlas (DWH Trustees 2015): <http://www.gulfspillrestoration.noaa.gov/restoration/early-restoration/early-restoration-projects-atlas/>.

**5-100 Comment:** The commenter expressed a need for long-term monitoring of restoration outcomes (more than 100 years).

**Response:** Permanent, long-term monitoring activities (more than 100 years) are beyond the scope of NRDA. The monitoring and adaptive management framework outlined in the PDARP/PEIS has been designed and funded to cover the time period during which restoration projects will be identified, implemented, and monitored as part of subsequent restoration plans proposed by the Trustees, via TIGs for each Restoration Area.

**5-101 Comment:** The commenter recommends that the Trustees perform a feasibility analysis and describe the expected outcomes from all restoration approaches for marine resources.

**Response:** The duration, longevity, and pervasive impact of the *DWH* oil spill on resources throughout the northern Gulf of Mexico calls for a restoration effort of unprecedented magnitude. The extensive injuries to multiple habitats, species, ecological functions, and geographic regions clearly establish the need for comprehensive restoration planning on a landscape and ecosystem scale that recognizes and strengthens existing connectivity among habitats, resources, and services in the Gulf of Mexico. A comprehensive restoration plan must consider this ecosystem context in deciding how best to restore for the vast array of resources and services injured by this spill. To fulfill the OPA mandate, the Trustees have pursued an iterative and phased restoration planning process, which has enabled the Trustees to adapt their restoration planning as more information became available.

Restoration will need to address injuries to the species at different life stages and across their geographic ranges. Therefore, the Trustees have designed a portfolio of restoration approaches that include a combination of well-established restoration approaches and more novel approaches in order to address resources where there is less experience implementing restoration. Although many of the more novel restoration approaches are based on recovery actions identified as part of existing resource management efforts, implementation that will allow for enhanced or expanded efforts may require a phased approach. This phased approach would include data collection to inform the best methods and to ensure restoration success, followed by larger-scale implementation of those preferred methods. Using a phased approach will enable the data collected to inform restoration decision-making and allow the Trustees to assess the effectiveness of restoration. In addition, some of these approaches also rely on voluntary participation, but to encourage participation there will be an incentive structure and contractual obligations to ensure restoration outcomes. This type of restoration was initiated in Phase IV of Early Restoration with the Pelagic Longline Bycatch Reduction Project (PLL Project). Implementing this portfolio of restoration approaches provides a robust, comprehensive solution to addressing the range of injured species and life stages.

**5-102 Comment:** A commenter recommends continuing monitoring and research initiated through the NRDA process to fill key gaps in information in areas of the Gulf where monitoring efforts have historically been limited. “For example, numerous studies were initiated in the deep-sea environment as part of the injury assessment. The contamination of the deep-sea sediments in the innermost impact zone continues, and the recovery trajectories for deep-sea organisms can extend for hundreds of years, making long-term monitoring and research of residual oil and the continued exposure of natural resources to BP oil imperative to understanding full injury. Therefore, further research to understand the natural resources and ecological functions in the Gulf of Mexico will better prepare us to quantify and understand injury for future disasters, whether oil-related or otherwise. In addition, a deeper understanding of the Gulf ecosystem functions allows resource managers to better manage fisheries stocks and our interactions with Gulf ecology.”

**Response:** The Trustees acknowledge that given the unprecedented temporal, spatial, and funding associated with this restoration plan, a robust monitoring and adaptive management framework is needed to support restoration. To increase the likelihood of successful restoration, the Trustees will conduct monitoring and evaluation of restoration outcomes, which can provide feedback to inform decision-making for current projects and refine the selection, design, and implementation of future restoration actions. General research is not funded under NRDA, only science and monitoring activities needed to inform restoration decisions. The monitoring and adaptive management framework outlined in the PDARP/PEIS is designed around collecting and interpreting targeted data and information specific to the restoration goals and objectives outlined in the restoration plan. Implementing targeted science and monitoring activities will allow the Trustees to more effectively plan, implement, evaluate, and adaptively manage restoration activities and report out on restoration outcomes.

## 8.3.6 Chapter 6: Environmental Consequences and Compliance with Other Laws

### 8.3.6.1 General/Overall Comments on Environmental Consequences and Compliance with Other Laws

- 6-1 Comment:** Commenter noted that NEPA requires a description of the complex ecosystem of the Gulf of Mexico, and that this complexity requires a thoughtful impact assessment.

**Response:** The Trustees agree with this observation and have prepared this PDARP/PEIS in order to evaluate different approaches to comprehensive ecosystem (as opposed to project-specific) restoration planning. This programmatic approach was intended to provide thoughtful consideration of potential beneficial and adverse impacts resulting from a comprehensive integrated restoration strategy. Chapter 3 provides a specific description of the ecosystem setting for this proposed action, and Chapter 6, Section 6.2, provides an overview of the approach to consideration of the affected environment for this NEPA analysis, including consideration of the ecosystem setting and the findings presented in the detailed injury assessment in Chapter 4.

- 6-2 Comment:** Commenter states that the purpose of the PDARP/PEIS is said in different ways and in different places, which is confusing.

**Response:** The Trustees reviewed references to the purpose and to the proposed action throughout the document to ensure clarity and understandability in each area of discussion. The organization of the PDARP/PEIS is introduced in Chapter 1, and the Purpose and Need per NEPA is presented in Section 5.3.2. Upon review, the Trustees did not find reasons to revise statements of the Purpose as it remains an accurate statement of the Trustees' purpose to restore extensive and complex injuries to natural resources and services resulting from the DWH oil spill.

- 6-3 Comment:** Commenter noted that projects that address the Trustees' restoration goals for many nearshore aquatic species impacted by the spill, including marine mammals such as bottlenose dolphins and manatees, have the potential to result in unintended adverse impacts on inshore and nearshore marine mammals and their prey species.

**Response:** The Trustees have considered potential adverse impacts to marine mammals associated with the proposed restoration approaches. Chapter 6 of the PDARP/PEIS discusses potential unintended adverse impacts of restoration activities on marine mammals where appropriate for the evaluation of each restoration approach. As discussed in Section 6.9.3, the Trustees recognize the need to comply with the Marine Mammal Protection Act and indicate that the Trustees will develop a review process with both NMFS and USFWS. As subsequent restoration plans and their integrated NEPA analyses tier from this Final PDARP/PEIS, future ESA consultations as well as MMPA review will be conducted at the project level to ensure that potential adverse impacts on listed marine mammal species as well as their critical habitats are addressed. At project implementation, the Trustees will comply with all MMPA permit conditions.

**6-4 Comment:** Commenter noted that habitat restoration projects in certain areas have the potential to impact manatees.

**Response:** The Trustees have considered potential adverse impacts to manatees associated with the proposed restoration approaches. As described above, Chapter 6 of the PDARP/PEIS discusses potential unintended adverse impacts of restoration activities on marine mammals, in some instances (e.g., entrapment, vessel collision) noting a particular potential for adverse impact to manatees (Section 6.4.1.3.2; Section 6.4.6.1). As discussed, subsequent restoration plans will tier from this PDARP/PEIS, at which time future ESA consultations as well as MMPA review will be conducted at the project level to ensure that any potential adverse impacts on manatees are addressed. Section 6.9.3 addresses compliance with the MMPA and indicates the Trustees will develop a review process with both NMFS and USFWS (noting USFWS jurisdiction for manatees). At project implementation, Trustees will comply with all MMPA permit conditions.

**6-5 Comment:** Commenter noted that potential impacts of restoration activities on marine mammals should be considered and provided specific examples, including the following:

- Dredging of contaminated sediments can temporarily re-suspend pollutants into the water column where they may be ingested by marine mammal prey (Martins et al. 2012); resuspended nutrients can contribute to the development of, or exacerbate, harmful algal blooms (Van Dolah 2000).
- Beach renourishment can alter benthic communities and affect the prey of marine mammals (Peterson & Bishop 2005).
- Backfilling of canals can trap marine mammals and block access to their natural habitat, requiring rescue and relocation of the “stranded” animals.
- River diversions can increase freshwater input into marsh habitat, exposing dolphins to low salinity waters. Such exposure can compromise epidermal integrity (as evidenced by skin lesions), cause physiological stress, and contribute to secondary infections (Holyoake et al. 2010; Mullin et al. 2015; Wilson et al. 1999). Low-salinity conditions can also affect the distribution of dolphin prey (Barros & Odell 1990).
- Disturbance from construction activities and associated vessel traffic can increase sound levels and disrupt foraging, habitat use, daily or migratory movements, and other behavior (Nowacek et al. 2004; Nowacek et al. 2001). Increased vessel traffic can also increase the risk of vessel strikes (Bechdel et al. 2009; FWS 2001; Wells et al. 2008).

The commenters noted that if not carefully managed, habitat restoration activities could present a significant impediment to the recovery of inshore marine mammals impacted by the oil spill, including bottlenose dolphin stocks in Barataria Bay, the Mississippi River Delta, Mississippi Sound, and Mobile Bay.

**Response:** The Trustees have considered potential adverse impacts to marine mammals, including bottlenose dolphins, associated with potential restoration activities in Chapters 5 and 6, including those raised by the commenter. The Trustees recognize the importance of carefully considering and managing potential impacts during subsequent project-specific restoration planning and implementation. In Chapter 5, planning and implementation considerations by Restoration Type (see Section 5.5) and by restoration approach (see Appendix 5.D) are included for consideration when developing and selecting future restoration projects. For example, Section 5.5.2.3 describes considerations for bay, sound, and estuary marine mammals to be considered during project development for the Wetlands, Coastal and Nearshore Habitats Restoration Type.

In Section 6.4 of the PDARP/PEIS discusses potential unintended adverse impacts of restoration activities on marine mammals associated with dredging, beach renourishment, backfilling of canals, river diversions, construction, and increases or changes in vessel traffic. In addition, as presented in Section 6.17, subsequent restoration plans will tier from this PDARP/PEIS, at which time site-specific analysis of potential impacts to marine mammals will be analyzed under NEPA, as well as conducting review of actions where appropriate under the Marine Mammal Protection Act (see Section 6.9.3) and Endangered Species Act (see Section 6.9.1). These subsequent restoration plans will consider the direct, indirect, and cumulative impacts of proposed actions and will ensure that effects to marine mammals are fully considered in all future project development and selection. At project implementation, the Trustees will comply with all MMPA permit conditions.

- 6-6 Comment:** Commenter noted “confusion as there are other plans available for Gulf restoration that are being informed and carried out that also relate to the oil spill, and that those plans are not discussed.” Commenter also found it “confusing from a reasonably foreseeable future and cumulative impacts standpoint.” The commenter recommended that the “document be updated to show the relationship of these plans to this PEIS, what is specifically being documented to be implemented in this plan, and what other plans will do.”

**Response:** The PDARP/PEIS recognizes that many restoration programs exist across the Gulf of Mexico. Section 6.6.4.1 summarizes restoration related to the DWH spill, and addresses this in context with cumulative impacts. Section 6.17.2 has been updated with a brief description of the approach to future cumulative impact analyses in tiered NEPA analyses. In addition, Section 7.3.3 discusses future coordination specifically with other DWH restoration programs. Coordination of restoration projects across the Gulf of Mexico will promote successful implementation of this PDARP/PEIS and will optimize ecosystem recovery within the Gulf. The Trustees recognize the value of coordination among restoration programs, and in the responses to comments on Chapter 7, provide additional responses regarding coordination with other Gulf restoration programs. Specific to the commenter’s concerns requesting that the Final PDARP/PEIS indicate the relationship of other Gulf restoration planning to the PDARP/PEIS, the Trustees updated the PDARP/PEIS to reflect the most recent figures, but did not add substantial new text detailing these programs or specific future planned projects. The Trustees recognize that subsequent restoration plans and their integrated, tiered NEPA analyses will need to build

on the programmatic cumulative impact analysis to analyze potentially significant cumulative impacts, including other funded restoration projects, within the geographic and resource focus of the subsequent restoration plans.

- 6-7 Comment:** Commenter stated that Section 6.6.4.6, Dredged Material Disposal, does not appear to address dredged material disposal activities within the U.S. Army Corps of Engineers (USACE) New Orleans District's area of responsibility.

**Response:** Section 6.6.4.6 of the draft PDARP/PEIS, Dredged Material Disposal, generally describes the USACE dredged materials management activities in the Gulf of Mexico. Additional details describing the USACE's active ODMDS by District have been added to this section in response to this comment.

- 6-8 Comment:** Commenter states that in the cumulative impacts section (Section 6.6.4.1) the plan seems to limit the impact of reasonably foreseeable future actions for the RESTORE Council to only the \$183 million in projects included in the initial FPL for bucket #2 funds, and not the \$4.4 billion included in the proposed settlement that will be available under the RESTORE Act for coastal restoration. In addition, the plan only mentions \$395 million of the \$2.5 billion that NFWF has available for coastal restoration.

**Response:** The PDARP/PEIS' cumulative impacts analysis is conducted on a programmatic basis and considers a broad range of possible cumulative impacts across different resource categories. In evaluating potential cumulative impacts associated with specific restoration plans or projects, the PDARP/PEIS appropriately focuses on presently reasonably foreseeable actions. In connection with the RESTORE and Gulf Environmental Benefit Fund (GEBF) funding, the PDARP/PEIS focuses on those actions and projects that are defined in the first three years of GEBF and in the Final Priorities List for RESTORE. Although the Trustees agree with the commenter that the proposed settlement provides greater certainty on the funding that will be available for these two programs, the availability of funding is not a determination of which particular projects will be funded in the future. Specifically, GEBF will receive \$2.544 billion in total, some of which has already been paid to the GEBF, and all of that amount should be paid in full by 2018. For RESTORE, approximately \$5.3267 billion will be available, of which \$800 million has already been paid. BP will pay \$4.4 billion more over the course of the next 16 years. The remaining \$127.5 million (80 percent of the \$159.5 million penalty against Anadarko) is potentially subject to appeal and therefore it is not certain whether or when that amount will be paid. Given that the PDARP/PEIS focuses on ecosystem restoration, the Trustees recognize that restoration projects resulting in ecosystem impacts to physical and biological resources are likely to be pursued under these funding sources. For example, although initial design work is underway for the *Lower Mississippi River Sediment Diversions (Planning stage)* and the *Mid-Barataria Sediment Diversion (Engineering & Design stage)* projects with funding support from the GEBF, there is not sufficient information about these projects to understand their environmental effects. Detailed information regarding potential environmental effects of these restoration projects will be determined during any future phases of project development. Consequently, the Trustees believe that there is insufficient information available to consider

these projects or other future projects from RESTORE Council and GEBF funding sources as reasonably foreseeable actions for the purposes of cumulative impacts analysis at this time.

The Final PDARP/PEIS is updated in section 6.6.4 to clarify that the cumulative impact analysis within each subsequent restoration plan and its integrated NEPA analysis will more specifically evaluate potential cumulative impacts as related to GEBF and RESTORE projects that are proposed in that Restoration Area. In addition, to the extent foreseeable and relevant to the actions proposed within a specific restoration plan, those cumulative impact analyses may also include actions outside that Restoration Area (e.g., for actions proposed for sea turtles) to ensure appropriate regional cumulative impact analyses are considered.

- 6-9 Comment:** Commenter states that the ODMDs referenced in the document only address the Mobile District’s ODMDs. The ODMDs used by the New Orleans District when dredging the Mississippi River, Southwest Pass, which is located in close vicinity of the DWH oil spill, do not appear to be addressed. In addition, for Table 6.B-7 it is noted that the segment under Louisiana that describes the New Orleans District’s maintenance dredging program is not accurate.

**Response:** The Trustees appreciate the clarification in the description of ocean dredged material disposal sites in Mississippi, Alabama, and Florida. Related discussion in Section 6.6.4.6 and Table 6.B.7 have been revised to incorporate these clarifications.

- 6-10 Comment:** Commenter expressed concern that the PDARP/PEIS references spatial planning (without defining or addressing it with specificity) as well as the potential establishment or expansion of marine protected areas. The commenter states that the PDARP/PEIS and NRDA process underway should be limited accordingly and not used to set policy, influence regulatory activities, or apply to other scenarios. The inclusion of the National Ocean Policy Executive Order in a list of “Other Laws and Executive Orders” underscores the Coalition’s concerns about making unwarranted reference to a far more expansive policy.

**Response:** Appendix 6.D, “Other Laws and Executive Orders” is a comprehensive list of all legal authorities relevant to the PDARP/PEIS and the subsequent restoration plans that will tier from this programmatic restoration plan. In the PDARP/PEIS, the Trustees use the words “spatial planning” generally to refer to monitoring tools that can help to better plan restoration actions for natural resources, specifically marine mammals, that were injured as a result of the DWH incident. It is not being used in the context of the National Ocean Policy or to refer to the body of literature on Coastal Marine Spatial Planning. The PDARP/PEIS provides a framework for restoring resources and services injured as a result of the DWH oil spill. It is not intended to apply to other scenarios such as policy setting.

- 6-11 Comment:** Commenter suggested that additional consideration of the level of climate change adaptation should be incorporated into the PDARP/PEIS analysis, and suggested that a climate change ecological resilience and resistance plan be prepared.

**Response:** The Trustees recognize the importance of considering climate change and resiliency planning with respect to restoration project development. The PDARP/PEIS considers climate change and resiliency planning programmatically in Chapter 6. Project- or site-specific

considerations related to climate change will follow as subsequent restoration plans tier from this PDARP/PEIS. Restoration planning, project development, and an appropriate level of tiered NEPA analysis will consider climate change and resiliency planning.

- 6-12 Comment:** Commenters requested that a further restoration goal should address the need to ensure that restoration efforts do not add further injury to cultural and sacred sites.

**Response:** The Trustees are dedicated to preserving the historic, cultural, and archaeological resources of the Gulf Coast. Consideration of environmental consequences to these resources is considered programmatically in the NEPA analysis of the PDARP/PEIS. As subsequent restoration plans tier from the PDARP/PEIS, those plans will be reviewed by the federal Trustees, federally recognized Indian Tribes, and State Historic Preservation Offices under Section 106 of the National Historic Preservation Act to evaluate any effects of the projects on historic properties. In addition to ensuring all regulations related to historic, archeological, and cultural resources are fully considered and complied with during subsequent restoration plans, the Trustees also describe in Section 5.4, the requirement for subsequent restoration planning to address the criteria described in the OPA regulations (15 CFR § 990.54). Those criteria include the requirement to evaluate alternatives based on “the extent to which each alternative will prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative.” These considerations in subsequent restoration plans and their tiered NEPA analyses and project specific compliance with other laws will ensure that effects to cultural and sacred sites are appropriately considered during project selection.

## 8.3.7 Chapter 7: Governance

### 8.3.7.1 General/Overall Governance Structure

- 7-1 Comment:** Commenters expressed general concern about the governance structure and, in some comments, strongly recommended that the Trustees reconsider the governance approach described in the PDARP/PEIS (e.g., that one Trustee Council be established versus the Trustee Council and eight TIGs currently proposed), urging the Trustees to give thought to how the efforts will be well-coordinated. Commenters expressed concern that the structure will be extremely cumbersome, inefficient, expensive, and burdensome to administer; that it could inhibit Gulf restoration; that the structure significantly outweighs the benefits of streamlined decision-making; and that it will be difficult to achieve consistency and coordination across the TIGs. Additional concerns included potential for disconnects when decision-making is delegated to a local level. Commenters requested that the Final PDARP/PEIS better outline how the federal and state Trustees will develop the structure and get the work done.

**Response:** The Trustees considered commenters’ assessment of the proposed governance structure. The Trustees believe that restoration decisions and priorities are best decided by the entities that have the most knowledge of and jurisdiction over resources in each Restoration Area. Separating the governance structure to include five Restoration Areas that are specific to Gulf State boundaries will ensure that restoration decisions are made in an efficient manner. Each TIG’s restoration decisions must be consistent with integrated ecosystem restoration described in the preferred alternative, which helps ensure that restoration decisions are made

in an effective manner consistent with and supporting the goals established in the PDARP/PEIS. Further, the inclusion of Regionwide and Open Ocean Restoration Areas acknowledges that many resources cross-cut political jurisdictions and that the Trustees will need to coordinate on restoration decisions that best benefit the injured resources and contribute to the ecosystem goals identified in Alternative A. The available administrative funds to support the structure were anticipated by the Trustees as part of the necessary costs of restoration on such a large ecosystem scale, and those administrative funds are part of the proposed settlement and were defined in the proposed Consent Decree and in Chapter 5, Section 5.10, of the released Draft PDARP/PEIS. The Trustees' development of more specific mechanisms for administering and implementing the PDARP/PEIS will appropriately be developed in the SOP described in Chapter 7 of the Final PDARP/PEIS. The Trustees believe the level of detail in the governance chapter, including the commitment to ensure all subsequent restoration plans are consistent with the Final PDARP/PEIS, is sufficient to describe an effective and efficient structure for implementing the defined restoration.

- 7-2 Comment:** A commenter requested that the PDARP/PEIS specifically state that Trustee representatives are required to be experts in their field so that positions are about recovery, not about politics. Other commenters recommended the Trustees define the management levels and expertise of employees who will be designated to sit on the TIGs.

**Response:** As stated in Chapter 7, the federal and state Trustees are designated pursuant to 33 USC § 2706(b)(2), which authorizes the President of the United States to designate federal Trustees and the Governor of each state to designate state and local Trustees. As described in Appendix 5.C.2.4, the Trustee agencies bring decades of experience and deep knowledge of the Gulf ecosystem to the DWH restoration planning effort. The representatives of those Trustee agencies who will serve on the Trustee Council and TIGs fully represent their Trustee resource management agency and have the authority to act in an official capacity to obligate their respective agencies and render funding decisions, or are specifically assigned by and reporting to that designated Trustee representative. Per the Trustee Council SOP and MOU, letters of designation will be submitted to the administrative record which identifies each Trustee's official Trustee Council and TIG members, and their alternate(s). Additionally, the funds allocated to each of the five goals, including the goal to "Provide for Monitoring, Adaptive Management, and Administrative Oversight," are adequate for each Trustees' respective technical experts to be engaged where needed in the restoration plan development, implementation, monitoring, and adaptive management, as well as for securing external experts where helpful to support implementation of the PDARP/PEIS.

- 7-3 Comment:** Commenters recognized that the decentralized decision-making structure proposed in the Draft PDARP/PEIS will increase efficiency in decision-making and accelerate implementation of critical restoration efforts around the Gulf, and that the structure has potential to serve as a good foundation for restoration decision-making. Commenters agreed with the flexibility for TIGs to phase decision-making given the 15-year payment schedule. However, commenters urged refinements be made to the PDARP/PEIS to provide for effective governance, efficient delivery and optimal coordinated use of NRDA funds. Specific

recommendations are addressed in other statements and responses (e.g., additional comment period on SOPs and MOUs, proactive and formalized efforts to coordinate between TIGs and across other restoration programs (e.g., RESTORE and NFWF), program reviews, project selection criteria, and strategic restoration planning).

**Response:** The Trustees appreciate the comments that the governance structure is a good foundation for restoration decision-making. The Trustees agree with and recognize the need for, and benefit of, on-going regional collaboration both within this governance structure and with external restoration programs. One of the primary roles of the Trustee Council is to establish common procedures in restoration planning, public engagement, communications, monitoring and adaptive management, and reporting that will be practiced by each TIG. As noted, the need for flexibility is also paramount to efficiency in restoration decision-making and implementation, so TIGs are provided some individuality, fully consistent with the Trustee Council MOU and SOP, to operationalize restoration within their Restoration Area to create efficiencies and expedite implementation. Given this, the Trustee Council remains the central coordinator of the Final PDARP/PEIS, responsible for establishing the framework in which the TIGs will operate. The Council is considering several means of integration across the TIGs, as well as with other restoration programs in the Gulf, including, but not limited to, strategic framework development, data sharing, public engagement, and science coordination. These topics are more thoroughly addressed in subsequent response to comments, below. While the Trustees agreed that some clarifications and additions to Chapter 7 are helpful and were incorporated in the Final PDARP/PEIS, the Trustees do not agree that every refinement must be made to the PDARP/PEIS to provide for effective governance. Rather, as noted by commenters, the PDARP/PEIS provides a good foundation for governance. The Trustees agree that it is necessary to ensure the Trustees' subsequent restoration planning decisions are fully consistent with the PDARP/PEIS and appropriately vetted with the public. The details of operationalizing this structure are appropriately made in the subsequent SOPs and MOUs, which may evolve over time as needed to optimize effective administration of this restoration effort.

- 7-4 Comment:** Commenters stated that the Final PDARP/PEIS and SOP should provide more detail on the specific processes that will be employed to promote and ensure formal coordination and consistency across the TIGs. Specific suggested approaches to ensure regional coordination and informed decision-making were provided by various commenters: 1) full Trustee Council continues to meet on a frequent and defined basis (annually recommended as a minimum) as a forum for TIGs to proactively share restoration plans, best management practices and consider how their intended activities fit into the larger regional landscape; 2) the meetings could provide for communication on activities to the public and with other Gulf of Mexico restoration programs, including RESTORE Council and NFWF; 3) the Trustee Council completes program reviews (some suggested annual, some biennial) to examine whether projects are on track to meet goals, with these program reviews serving as a forum to inform and engage the public; 4) the Trustee Council must continue to play a role in reviewing, approving, and/or revising restoration plans, 5) Trustee Council adoption of monitoring standards and protocols.

**Response:** The Trustee Council is employing several methods for formal coordination, consistency, and collaboration across TIGs, both for information sharing and the adaptive management of the program over time. This includes, but is not limited to: annual Trustee Council meetings to consider TIG progress, lessons learned, and strategic frameworks (additional discussion in response to comment 7-29), with the annual meeting noticed to the public; frequent programmatic reviews to consider issues affecting implementation or long-term program success (as already addressed in Section 7.3.3); data and science sharing across TIGs, utilizing common monitoring and data standards (additional discussion in responses 7-49 through 7-55, below); requirement for TIGs to consult with other TIGs when work overlaps Restoration Areas; and the membership of each TIG (e.g., federal Trustees as a consistent member of all TIGs, and the membership of all Trustees both on the Trustee Council and the Regionwide TIG). Additionally, the Trustee Council is anticipating the need for support staff to assist the Trustee Council in cross-TIG coordination related to administration, strategic restoration framework development, and science coordination (additional discussion in response to comment 7-9). Further, the Trustees are committed to coordination with other Gulf of Mexico restoration programs, which is further addressed in the response to comment 7-18. The Trustees believe the Trustee Council role (i.e., providing for restoration planning consistency via the Trustee Council SOP) is appropriate as described in the Draft PDARP/PEIS, and believe that the commenters request for formal Trustee Council approval of all restoration plans would undermine the efficiency and effectiveness that are foundation to the described governance structure. This additional layer of approval would increase administrative costs, delay restoration decisions and implementation, and is not necessary to achieving coordinated restoration across the TIGs.

- 7-5 Comment:** Commenters expressed concerns that the governance structure will inhibit the public's ability to keep track of the TIGs' various procedures and actions, reducing public awareness and making it difficult for the public to meaningfully participate in restoration planning. Commenters were concerned with the lack of one central interface for the public and nongovernmental organizations to offer comment on the whole process. Other commenters indicated that the structure creates substantial hurdles for public engagement and participation of Gulf Coast communities in the TIGs planning processes, since each TIG will develop its own engagement strategies and timelines. Commenters were concerned that the dispersed system may seriously prevent wide-ranging public engagement among rural, low-income, communities of color, and limited English-speaking members of the public. Commenters indicated the Trustees must provide a consistent restoration planning process across TIGs that will not require enormous expenditures of time and effort from the public to participate, with recommendations including TIGs coordination on timing for decisions, issuance of joint restoration plans, and/or holding joint meetings. Commenters indicated the Trustees must address the barriers to public engagement that the proposed governance structure will create and ensure effective, accountable governance and inclusive, meaningful public engagement to harness the full potential of these resources on behalf of the public.

**Response:** The proposed governance structure is viewed by the Trustees as the best structure to achieve efficient and expeditious implementation of the restoration activities proposed in the

PDARP/PEIS. The Trustees recognize that no governance structure is without issue, and as such, the Trustees are committed to limiting logistical impacts as much as practicable by providing support and coordination across the TIGs through the Trustee Council. The Trustee Council website will serve as a central location for updates to each TIG planning process and timeline, as well as other relevant announcements. Additionally, the Trustee Council SOP will establish common procedures that will be adhered to by each TIG, including standards for restoration planning and public engagement that the public will be able to anticipate. Trustee Council meetings will also provide a forum for coordination between TIGs, as discussed in a prior response. One of the benefits of creating TIGs is that it creates a more local administrative body that can more effectively engage with local communities and will be in closer proximity and of easier access to the public. If there were only one Trustee Council, meetings would necessarily be held a considerable distance from any given locality most of the time. This could increase barriers to participation of the above listed communities. Furthermore, the Trustees commit to annual Trustee Council and TIG meetings that will be open for public engagement, as described in Chapter 7.3 and 7.7 and which will be further defined within the Trustee Council SOP.

- 7-6 Comment:** Commenters cited an example of a DWH early restoration living shoreline project in Mississippi to express concern that public engagement is needed early in the process to ensure appropriate project development. The commenter noted that the project has needed two proposed changes and needs to ‘go back to the till’ again to get it right.

**Response:** The Trustees agree that public involvement early in the process is helpful, and have updated Section 7.3. This comment otherwise pertains to the public input process for a state wetlands permit process regarding a Phase III Early Restoration project in Mississippi and is outside the scope of the PDARP/PEIS.

- 7-7 Comment:** Commenters raised concern over the decentralized governance structure, which creates eight TIGs for specific Restoration Areas, is established on political boundaries rather than a holistic ecosystem approach. Commenters suggested that this decentralization would create a ‘silo effect’ and would not allow the Trustees to meet the ecosystem restoration goals as described for the integrated ecosystem restoration approach (Alternative A) of this PDARP/PEIS. A commenter stated that creation of eight TIGs to minimize difficulties of reaching consensus was unnecessary because restoration funding is allocated by resource to specific political subdivisions, and that the Trustee Council should have authority to approve or disapprove TIG restoration decisions. Some commenters suggested organizing by watershed boundary and were concerned that there was no forum for all Trustees to come together. Commenters provided recommendations to strengthen coordination, consistency, and accountability across TIGs and to address restoration an ecosystem scale in the event the proposed structure moves forward. Commenters expressed concern that the proposed structure sets a troubling precedent for future large NRDAs.

**Response:** The Trustees devoted considerable thought to designing a decision-making structure for restoration that will be as efficient as practicable without sacrificing the benefits of coordination across the Gulf. Having experienced four years of making decisions on early

restoration projects through consensus by all five Gulf States and four federal Trustees, the Trustees believe that the full restoration plan can best be implemented by the Trustees through the proposed TIG structure, in which most TIGs include a subset of all Trustees, while the Regionwide and Unknown Conditions and Adaptive Management TIGs, as well as the Trustee Council itself, include all Trustees. There are several mechanisms in the PDARP/PEIS to ensure the integrated ecosystem restoration approach developed by the Trustees in the PDARP/PEIS will be achieved. First, the preferred alternative in the PDARP/PEIS was developed by all of the Trustees after significant consideration as explained in the PDARP/PEIS. All of the Trustees are obligated to meet the restoration requirements presented in the Consent Decree and PDARP/PEIS, which is based on an ecosystem perspective. Second, the participation of the federal Trustees in all TIGs will provide continuity in the ecosystem perspective across all the Trustee organizational structure. Third, all of the Trustees will participate in the Regionwide TIG, which is intentional to promote ecosystem connectivity across resources and living coastal and marine resource Restoration Types. The TIGs are only a function of administration and cannot alter the body of work mandated in the Final PDARP/PEIS, future Record of Decision, and final approved Consent Decree. Fourth, as discussed in other responses herein (see 7-29), the Trustee Council will commit to a minimum of an annual public meeting, which will serve as a formal forum for TIGs to convene. Fifth, the Trustee Council SOP will detail the common accountability and reporting requirements of each TIG, which will be made publicly available through the Trustee Council website. Finally, other mechanisms for cross-TIG coordination exist, including particularly strategic framework development and coordination of monitoring and adaptive management through a Cross-TIG Monitoring and Adaptive Management Work Group.

**7-8 Comment:** Commenters indicated that the oyster restoration work during early restoration does not seem to reflect comprehensive ecosystem approach. Specifically, the commenter raised concern that Mississippi oyster cultch projects 2012–2013 did not make sense because restoration work should have started in Florida, then Alabama, Mississippi and Louisiana, in that order. Better communication on restoration methods is needed to ensure comprehensive restoration.

**Response:** Under Early Restoration, the Trustees implemented oyster restoration projects in Florida, Alabama, Mississippi, and Louisiana (see Appendix 5.B, Early Restoration). Subtidal oyster cultch placement projects in Louisiana, Florida, Alabama, and Mississippi approved in Phases I and III, restored suitable substrate (e.g. cultch) for spat settlement within public oyster grounds and other oyster reef areas. In addition, living shoreline projects in Florida, Alabama, and Mississippi approved for Phases III and IV, provided substrate for oyster settlement within nearshore areas. These projects are being monitored for success in restoring oysters and/or secondary productivity; project monitoring results and hydrodynamic data and models will be used in planning future restoration actions.

Oyster restoration will be conducted through the proposed governance structure within each of the five Gulf states' TIGs and the Regionwide TIG for resources that range throughout the Gulf. The oyster Restoration Type in the preferred alternative will implement additional and strategically targeted oyster restoration projects. Restoration projects will be designed to

restore oyster recruitment and nearshore oyster cover, incorporating the important concept of a common regional larval pool, to address remaining oyster injury

**7-9 Comment:** Commenters were concerned that, without dedicated staff to serve the Trustee Council, the Trustee Council's ability to provide the level of coordination (including coordination with RESTORE Act and NFWF) and oversight envisioned by this restoration plan will be significantly impaired. Some commenters suggested particular staff positions, including but not limited to an executive director and science coordinator, or referred to the Gulf Coast Ecosystem Restoration Council as a good model for a staffing structure. Other commenters requested that the funding source to support dedicated staff be specifically described in the PDARP/PEIS.

**Response:** The Trustee Council will continue to utilize support staff on an as-needed basis to support the technical and administrative functions of Trustee Council-level operations and recognize the need for flexibility in evolving a Trustee Council staff as the program matures based on workload and efficiencies that are identified over time. Technical and administrative functions this staff is anticipated to support include, but may not be limited to: meeting logistics; meeting documentation; communications; legal consult; financial reporting; technical planning and evaluation; and intra- and inter-programmatic coordination, including with other DWH restoration programs in the Gulf of Mexico. Additionally, Trustee Council staff may assist the TIGs, as needed, in coordinating across TIGs and assisting in the completion of Trustee Council reporting. Staff may be designated from existing personnel within the Trustee agencies, procured from external sources, or hired as permanent or contractual government employees. Funding to support staff for Trustee Council-specific operations will be from the Regionwide TIG Administrative Oversight and Comprehensive Planning allocation, which was clarified in Section 7.2.

**7-10 Comment:** Commenters called for the PDARP/PEIS to require establishment of a Regional Citizen Advisory Council (RCAC), which could be modeled after those set up after Exxon Valdez, and could establish part of the linkage across the Gulf for informing the public. Specific recommendations from various commenters were: include commercial fishers, resource managers, stakeholders, experts, commercial fishers, subsistence fishers, conservationists, socially vulnerable and native stakeholders in a regional citizens' advisory council; establish the RCAC in accordance with the Federal Advisory Committee Act, endow the RCAC via funding from the Oil Spill Liability Trust Fund; establish TIG citizen advisory councils in addition to a RCAC; use the RCAC as part of engagement strategies that promote a two-way dialogue on restoration and educate the public on the decision-making process; and involve the RCAC to enable public participation throughout restoration (planning, implementation, monitoring and adaptive management). Commenters indicated that "President Obama's National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling" recommended a public advisory committee should be created in the Gulf.

**Response:** The Trustees acknowledge the need to more specifically describe the public engagement and transparency that will occur in the restoration planning process, and believe that the additional engagement and transparency steps described in Sections 7.3 and 7.7, and in

response to comments 7-28 and 7-29, meet the current needs for public engagement and involvement without formal development of a Regional Citizens Advisory Group. Public dialogue and comment will be possible during an annual Trustee Council meeting and annual TIG meetings that will be open to the public. The Trustees will also engage the public and maintain transparency of the restoration planning process by accepting public submittal of project ideas, providing the public with a description of what Restoration Type(s) each TIG will focus on over a specified timeframe, providing public review and comment on each restoration plan, including opportunities for public engagement during draft restoration plan meetings. Further, the Trustees are committed to a transparent restoration planning process and will ensure that information is shared in a timely manner related to restoration planning milestones, project reporting, and monitoring data aggregation through the use of the Trustee Council website; TIG websites; the DIVER Restoration Management Portal; and focused press releases, email blasts, and/or text messages, although the exact means will likely vary by TIG. Additional details of the public engagement and transparency steps have been included in Sections 7.3 and 7.7 to provide clarifying information in the Final PDARP/PEIS. More specific details will be further described in the Trustee Council SOP and any subsequent SOP for a given TIG.

One commenter also referenced a report recommending a public advisory committee. That September 2010 report, correctly titled *America's Gulf Coast: A Long Term Recovery Plan after the Deepwater Horizon Oil Spill*, provides recommendations on working with existing federal and state advisory committees to ensure that relevant scientific and technical knowledge underpins planning, but does not have recommendations specific to a citizen's advisory group for the NRDA effort.

- 7-11 Comment:** Commenters stated that in the PDARP/PEIS, the Trustees should more clearly set out standards and a structure for the individual TIG restoration plans, project selection, and project selection criteria. They also stated that there should be additional public engagement during the restoration planning process and that engagement needs to be described, that there needs to be more detail about how project-specific NEPA planning (including cumulative impact analysis) will be conducted, that plans should include education and outreach components, that the projects considered include existing regional planning efforts, that coordinated planning should leverage other restoration efforts, that project selection should be informed by the restoration strategies in the PDARP/PEIS and by monitoring results from early restoration, and that settlement funds should be spent on restoring injured resources.

**Response:** The Trustees received numerous comments on the restoration planning process and have made clarifications and changes in the Final PDARP/PEIS Sections 7.3 and 7.7. The restoration planning procedures in the Final PDARP/PEIS provide the foundation for consistency across TIG restoration planning. Additional detail is more appropriately developed in the Trustee Council SOP to operationalize this common foundation, and specific restoration planning details for each TIG will build on the Trustee Council SOP. This approach provides the common standards and structure all Trustees will follow in each TIG, and it allows appropriate flexibility for the TIGs to augment those procedures—for example, to align NRDA processes with other restoration planning and public engagement already underway in each of the Gulf states. The

Trustees believe the level of detail provided in the Final PDARP/PEIS is sufficient to develop the foundation and to allow the Trustees to work together to operationalize this mechanism following finalization of the PDARP/PEIS.

A key concern raised by commenters was the need for clear understanding of the public engagement and transparency to be implemented during TIG restoration planning. The Trustee Council SOP will define the restoration planning milestones that each TIG will follow, including the minimum requirements for public awareness and engagement. Each TIG's procedures will build on and be fully consistent with that SOP. For example, a particular TIG may agree to adapt existing state restoration planning public involvement mechanisms to best align NRDA restoration public involvement with other restoration programs. TIG restoration planning procedures will ensure that the public is able to engage with each TIG. Following the initial years of NRDA restoration planning, the Trustee Council and TIGs may update SOPs, as appropriate, to ensure effective public engagement and involvement procedures. Section 7.3.1 in the Final PDARP/PEIS has been updated to provide additional detail on restoration planning, including opportunities for public awareness and engagement during restoration plan development, and to clarify how restoration planning will be developed in the Trustee Council SOP. A summary of the clarifications in Section 7.3.1 to respond to public comment includes: adding a step to address initial public awareness/engagement on restoration plans following settlement; establishing an annual meeting of each TIG focused on public involvement; notifying the public when a restoration plan is initiated; and clarifying public involvement at the formal draft and final restoration plan releases. Additionally, the draft restoration plan description in Section 7.3 has been updated to ensure that draft plans address the context of the plan with respect to other TIGs and other Gulf restoration programs.

Commenters also requested clarification on standard procedures for project selection. The Trustees believe that the Draft PDARP/PEIS provides sufficient information on these criteria, and did not revise the Final PDARP/PEIS. As described in Section 5.4.7, the OPA regulations (15 CFR § 990.54) provide minimum criteria to be used by Trustees to evaluate alternatives, and they allow Trustees to establish additional incident-specific evaluation and selection criteria for alternatives and restoration projects. For this incident, the Trustees have determined that the action alternatives and subsequent restoration plans and projects must also be consistent with the goals outlined in Section 5.3.1 (Programmatic Trustee Goals) with the Restoration Types described in Section 5.5. Specifically, Section 5.10.4, Section 6.17.2, and numerous portions of Chapter 7 specify that subsequent restoration plans must be consistent with the Final PDARP/PEIS. Section 7.2.2 explains that TIGs have responsibility to ensure this consistency.

Commenters requested that inclusion of education and outreach in future restoration plans be required in the Final PDARP/PEIS. The Final PDARP/PEIS was not revised, as Trustees believe education and outreach would be incorporated into appropriate restoration projects and plans, but may not be a useful component of all projects moving forward. The Trustees have considered education and outreach associated with appropriate restoration projects throughout the Early Restoration process, and they will continue to consider these components where appropriate as part of proposed projects and restoration plans.

The Trustees believe that the commitment to consider monitoring results in future restoration decisions is a foundational component of the Monitoring and Adaptive Management framework described in Appendix 5.E, and Section 7.5, and modifications to the Final PDARP/PEIS were not needed to ensure that monitoring, including Early Restoration monitoring, is considered in restoration decisions. Multiple comments were received on the Monitoring and Adaptive Management framework, and those comments have been addressed separately.

Finally, commenters requested clarification on the future NEPA process. The Trustees believe that the Draft PDARP/PEIS provided sufficient information regarding how subsequent restoration plans will be integrated with the appropriate NEPA analysis tiered from this PDARP/PEIS (see Section 7.3 and Section 6.17). In response to comments, additional clarification is provided in the Final PDARP/PEIS in Section 6.17.2, on the approach to cumulative impact analyses in the integrated NEPA analyses. Those cumulative impact analyses for affected resources would incorporate effects analyses by reference from the Final PDARP/PEIS and build on those analyses where appropriate, focusing as appropriate to consider the direct, indirect, and cumulative site-specific impacts of the proposed projects in the given Restoration Area.

- 7-12 Comment:** A commenter expressed concern about the restoration planning processes of the TIGs, stating that the processes should be consistent across all TIGs, particularly to reduce barriers to public participation, and that each plan should be reviewed by independent advisory boards.

**Response:** The Trustees recognize that implementing the ecosystem-wide goals of this PDARP/PEIS requires consistency in the planning processes across the TIGs. The Trustee Council SOP will describe a standard restoration planning process that will be used by all TIGs to ensure that each plan contains consistent information, including how the specific plan tiers from this PDARP/PEIS and a description of how the projects included in a plan fit into the TIG's restoration vision, any strategic frameworks, and as relevant, the relation of the preferred project alternatives to projects proposed and/or being implemented under other Gulf restoration programs. The Trustees have also committed to additional public engagement and transparency early in the planning process so that the public is aware of the types of projects that will be included in plans and, in some cases, the specific projects that will be evaluated in a plan prior to a draft plan being developed. The Trustees believe that this additional level of engagement and transparency will allow better coordination with subject matter experts, local communities, and other stakeholders throughout the restoration planning process, and that it negates the need for independent advisory review boards.

- 7-13 Comment:** Commenters indicated that restoration project selection should focus on injured resources (e.g., Plaquemines Parish, Louisiana) and should prohibit the use of funds for projects that damage Gulf resources.

**Response:** The Trustees agree that restoration under OPA focuses on restoring for injuries. Under OPA, the Trustees are required to consider restoration alternatives that address injured resources, as is done in this programmatic damage assessment and restoration plan. The Restoration Types and associated restoration approaches represent a broad set of restoration

actions that are appropriate to address injuries from the DWH incident. Subsequent restoration plans also will evaluate how proposed projects and alternatives address injuries.

The evaluation of restoration alternatives in subsequent restoration plans will take place in accordance with the OPA regulations, including the requirement to evaluate the “extent to which each alternative will prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative” (15 CFR § 990.54[a][4]). This analysis ensures that the potential for collateral injury is fully considered by the Trustees in developing and selecting preferred restoration alternatives.

- 7-14 Comment:** Commenters identified specific projects (i.e., Florida Caloosahatchee River Water Basin Storage Reservoir Project, 100-1000: Restore Coastal Alabama, Grand Bay National Wildlife Refuge land acquisition projects, restoration and protection of estuaries in Matagorda and Galveston Bay, and Galveston Barrier Island Restoration) and techniques (such as the use of ADSorb-it fabric) that should be considered in future project selection. They also suggested projects or areas that should not be included in future project selection (i.e., Gulf State Park Area).

**Response:** The Trustees appreciate the submission of these projects and recognize that the public has been and will continue to be an important source of project ideas. Public input on project ideas is specifically addressed in Section 7.3; however, because specific project selection is a responsibility of the TIGs and specific projects are not considered in this programmatic restoration plan, the Trustees encourage the commenters to submit these specific project concepts to the Trustees’ project submission database if they have not already been submitted. The Trustees will maintain the current project submission database (<http://www.gulfspillrestoration.noaa.gov/restoration/give-us-your-ideas/suggest-a-restoration-project/>). The public will have an opportunity to comment on projects considered in each future restoration plan.

- 7-15 Comment:** A commenter recognized that the Trustees are operating under certain laws, but urged the Trustees to push the boundaries of Trustee authority and focus on projects that reduce fossil fuel consumption instead of focusing on restoration.

**Response:** The Trustees cannot exceed the boundaries of their authority beyond that which is granted under OPA. As the commenter acknowledges, under OPA, the Trustees are required to consider restoration alternatives that address injured resources. This PDARP/PEIS proposes implementation of an integrated ecosystem restoration plan, which allocates funding to specific Restoration Types within specified Restoration Areas based on the assessment of the injured resources.

- 7-16 Comment:** Commenters noted that strategic restoration planning is needed to assist in identifying opportunities to coordinate and leverage restoration efforts. They recommended that TIG preparation of strategic restoration plans—currently optional—be made mandatory in the final PDARP/PEIS and built into project restoration plans where possible. Further, commenters stated that strategic planning would compel TIGs to give thought to project

sequencing and the order of injury restoration, and that the Open Ocean and Regionwide TIGs should coordinate strategic plan development for living marine resources. Commenters also stated that strategic plans should be developed not just for each TIG, but also for resources across TIGs in order to ensure cross coordination, goals are attained, and potential conflicts among projects are avoided. Commenters indicated that resource strategic plans should identify key uncertainties and guide planning, monitoring, research, and adaptive management (including a process for developing additional restoration approaches) across Restoration Areas. Commenters also requested that previous regional and state restoration plans be considered in selection of projects and that, specifically in Louisiana, projects currently identified in the Coastal Master Plan and/or the Louisiana Oil Spill Coordinator's Office Regional Restoration Planning Program be considered first so as to avoid unnecessary costs toward development of new projects. Commenters recommended that strategic plans be updated as necessary to reflect changing conditions or evolving science.

**Response:** Strategic frameworks will be developed (as revised in Section 7.3.1) for many of the Restoration Types allocated to the Regionwide and Open Ocean TIGs, such as oysters, sea turtles, birds, and marine mammals, in order to address project priorities and sequencing, coordination across Restoration Areas, common monitoring standards and approaches, and opportunities for adaptive management at the project, resource, and strategic plan levels. TIGs with allocations for living coastal and marine resources will coordinate in this strategic framework development. For all Restoration Types, existing regional and state plans will be analyzed to determine whether projects are appropriate to evaluate in subsequent restoration plans, following the requirements of the OPA regulations for use of regional restoration plans (15 CFR § 990.56). The Trustees recognize that there has been considerable effort and collaboration on many existing plans and that leveraging existing projects and project plans can reduce project development costs.

**7-17 Comment:** One commenter asked how the Trustees have translated the funding allocation into acreages.

**Response:** The programmatic nature of the PDARP/PEIS does not allow the Trustees to specifically determine at this time the number of acres that will be restored. However, costs per acre will be a consideration in the Trustees' project-specific alternatives analysis, as it depends upon technique and location.

**7-18 Comment:** Commenters called for formal, transparent coordination with NFWF and RESTORE, including more detail and clarity in the PDARP/PEIS and/or SOP on how, when, and what the coordination will entail.

**Response:** The Trustees recognize the importance of coordination with the NFWF GEBF and RESTORE to increase restoration synergies and reduce unintended restoration overlap across the programs. The Trustees are committed to coordination with NFWF and RESTORE and will be able to capitalize on the many meetings and overlapping responsibilities of the NRDA state and federal Trustees in their roles across these programs. Many of the NRDA Trustees, as described in Section 7.2.1, are the same agencies and appointees that are consulted by NFWF and that sit

on the RESTORE Council. Thus, because the same agencies work across all three funding programs in Florida, Alabama, Mississippi, Louisiana, and Texas, there will be synergies between the programs, and opportunities to leverage funding across programs will be possible and achievable, when appropriate. Agencies represented as designated natural resource Trustees that are also consulted on NFWF GEBF projects include:

- Federal: NOAA and USFWS
- Florida: FDEP and FWC
- Alabama: ADCNR
- Mississippi: MDEQ
- Louisiana: CPRA
- Texas: TPWD, TCEQ, and TGLO

Similarly, the RESTORE Council comprises federal agencies and the five Gulf states. All federal agencies acting as NRDA Trustees (DOC-NOAA, DOI, EPA, and USDA) are represented on the RESTORE Council, and each Gulf state designee is also an NRDA Trustee for that respective state (Florida: FDEP; Alabama: ADCNR; Mississippi: MDEQ; Louisiana: CPRA; and Texas: TCEQ). The Trustees will discuss potential coordination mechanisms with the other two programs following finalization of this document, to consider what coordination mechanisms may be proposed to facilitate coordination and inform the public of those coordination efforts. As mechanisms are developed they may be added to the Trustee Council SOP.

**7-19 Comment:** A commenter requested that Trustees develop a spatially explicit, publicly accessible GIS database to map existing and planned restoration projects related to all funding streams in the Gulf of Mexico.

**Response:** The development of a Gulf-wide database to map existing and planned restoration projects related to all funding streams in the Gulf of Mexico would lie outside the purview of the NRDA restoration-specific funding. However, the Trustees intend to use the DIVER Restoration Management Portal to house NRDA restoration-specific project information and associated monitoring data that will include spatially based data, as applicable. Additionally, the Trustees are planning to use this same portal to house Gulf-wide environmental data that would help inform restoration in the Gulf, which will also include spatial data, as applicable. The Trustees intend to use this platform to track and communicate their restoration efforts and progress to the public. The DIVER Restoration Management Portal can support data integration and sharing across a variety of data sources, and it may be used to further coordination among existing platforms and other programs. The Trustees may coordinate with the RESTORE and NFWF GEBF programs to identify opportunities for data coordination. Coordination through spatially explicit data will help Trustees to identify and manage potential conflicts, identify synergies, and leverage opportunities in space and time, both within NRDA restoration efforts and among programs.

**7-20 Comment:** Commenters requested that the Trustees consider implementing projects, including monitoring data collection, with nonprofits, local fishers, conservation corps, the disabled community, and through the use of local contractors. Commenters indicated that this would use

the deep knowledge of local people to support restoration and monitoring and promote a working coastline. Commenters additionally requested that small communities and local fishers be given consideration in accessing restoration implementation funds, and the preference be given to local workers and firms for contracts.

**Response:** The Trustees recognize that there is considerable local ecological knowledge from nonprofits, fishers, and local contractors that can facilitate project implementation. When developing restoration plans, each Trustee will consider the most efficient and effective means to implement each phase of a project; however, each Trustee must follow contracting and grant requirements established in their respective contracting and grant regulations. Therefore, the Trustees as a whole cannot commit to local set-asides, but will ensure that projects are implemented cost-effectively and in partnership with or contracted to the most suitable project teams on a project-specific basis.

- 7-21 Comment:** Commenters expressed concern over resource agencies' capacity to provide expeditious consultations and permit reviews. They specifically requested that NOAA and DOI consider adding staff in the Gulf region to meet future compliance and resource planning demands and consider co-locating staff to expedite the consultation review process.

**Response:** The Trustees, especially NOAA and DOI, recognize the need to expeditiously execute their consultation and permitting requirements (e.g., Endangered Species Act, Essential Fish Habitat, Migratory Bird Treaty Act) for projects under this program and projects proposed under other Gulf restoration funding programs, while managing the current workload to support Clean Water Act permit reviews and other existing workload commitments. At this time, the determination is that NRDA funding cannot be used directly to fund additional regulatory positions. The Trustees are engaged in programmatic Endangered Species Act Section 7 consultation with NMFS and with USFWS, and that programmatic consultation is considering approaches to streamline consultations by providing minimum design standards that, if met, would expedite their ESA reviews. Further, DOI has developed a system through implementation of the Trustees' Early Restoration program that has helped to expedite their review requirements under the Endangered Species Act. At this point, the Trustees are not proposing to use NRDA funds to add additional regional staff to support future consultations, and they are not proposing to co-locate staff. However, the Trustees recognize the anticipated increase in regulatory requests for projects proposed in the Gulf of Mexico and will evaluate the workload and assess options for workload planning as appropriate.

- 7-22 Comment:** Commenters requested additional clarification of project-specific long-term maintenance, recognizing that it is essential over the lifespan of each selected project. They specifically requested clarification of what a project's lifespan entails. Further, given that the PDARP/PEIS provides Trustees the flexibility to work with third parties to fulfill long-term maintenance responsibilities, commenters suggested that paying third parties for long-term maintenance may be very costly, that cost-control measures and contracting standards be identified, and that third parties be further defined (e.g., municipalities, nongovernmental organizations, landowners, levee boards, private corporations, individuals). Finally, commenters

suggested that the PDARP/PEIS specify additional parameters for the types of maintenance activities that could be eligible to receive funding for long-term maintenance.

**Response:** Long-term maintenance is a critical component of the restoration implementation process and will be addressed by individual implementing Trustee agencies as they develop budgets for restoration implementation; however, the length of time for and types of activities involved in long-term maintenance will vary by project, including an evaluation of the expected lifespan in which the benefits of each project are expected to be achieved, and will be addressed on a project-specific basis. Because this PDARP/PEIS does not select specific projects, the TIGs must retain flexibility to implement the most feasible and efficient project implementation methods, including methods for long-term maintenance. Delegating long-term maintenance responsibilities to third parties as described in Section 7.4 may or may not be the most efficient use of a project's long-term maintenance funds. The individual implementing Trustee agencies will retain the flexibility to work with the most appropriate entities to implement their long-term maintenance responsibilities. Because projects are not currently selected, a complete list of entities that may work with the Trustees is not feasible or considered necessary at this time; however, the entities likely include municipalities and nongovernmental organizations. Details of project-specific activities and long-term maintenance plans, including types of maintenance activities anticipated, will be included in future TIG restoration plans, which will be available for public review and comment.

- 7-23 Comment:** A commenter asks that the Trustees consider how operations and maintenance will be funded to respond to damages such as storm impacts and ensure that projects continue to provide benefits throughout their expected lifespan and over the longer term (i.e., beyond 15 years).

**Response:** The implementing Trustee(s) for each project will be responsible for developing cost estimates, which will range in complexity based on each project. Projects involving construction (e.g., marsh creation, oyster reef restoration) would typically include budgets for contingencies to help deal with uncertainties during project implementation, such as storm events and/or increases in material costs. Further, project budgets involving construction would also include an operations and maintenance budget to fund certain activities specific to that project over the expected lifespan (see response to comment 7-22). Project-specific operations and maintenance budgets beyond a project lifespan would be determined on a case-by-case basis, if needed.

- 7-24 Comment:** Numerous commenters requested that all TIG governance documents, particularly SOPs, be made available to the public for comment, review, and input and/or that Final PDARP/PEIS should provide more detail on what the SOPs will include, especially related to procedures for public engagement. Some commenters specifically requested this level of public availability and input for the Trustee Council SOP.

**Response:** The Trustee Council SOP will provide an overarching set of procedures that will guide operations of the Trustee Council and TIGs. The Trustee Council SOP will be made publicly available via the administrative record as well as on the Trustee Council website. The Trustees recognize the need to clarify future public engagement opportunities. Section 7.7.1 has been

edited to reflect the commitment to additional public engagement opportunities described in other comments (see response to comment 7-29). Future TIG-specific SOP will be consistent with the Trustee Council SOP and will also be made publicly available when final. The public will be notified through the Trustee Council website when SOP are available, and when major modifications to an SOP (either Trustee Council or a specific TIG SOP) are made.

- 7-25 Comment:** Commenters recommended that the Trustee Council SOP include a set of high-level selection criteria for adoption across all Restoration Areas and by all TIGs. Specific recommendations included considerations such as how restoration plans are developed, implemented, and monitored; administrative and long-term management of restoration; public engagement; level of scientific review; coordination with other TIGs and other restoration programs; leveraging of other restoration dollars; and presence of a project in an existing comprehensive plan. Some commenters suggested that an additional project selection criterion could consider the level of collaboration with smaller groups, such as fishers and small communities.

**Response:** The Trustees understand that a common set of selection criteria is helpful given the overlap in resources being restored, but recognize that each TIG needs flexibility to further define and develop additional criteria based on specific work likely in their respective Restoration Areas. To that end, Section 5.4.7 describes the OPA standards that provide a minimum and consistent set of evaluation standards that must be evaluated for each restoration alternative (OPA Section 990.54), and Section 5.4.7 further describes additional criteria developed in this Final PDARP/PEIS that are applicable to future project selection, including consistency with the programmatic trustee goals outlined in Section 5.3.1 and with the Restoration Types described in Section 5.5. In addition, Section 5.10.4 calls for Trustees to evaluate projects in subsequent restoration plans taking into account the planning and implementation considerations described in Section 5.5 (for Restoration Types) and Appendix 5.D (for restoration approaches). The Trustees will ensure that, at a minimum, the project selection criteria developed in SOP (Trustee Council and TIG-specific) reflect the OPA criteria and additional criteria established in the Final PDARP/PEIS.

- 7-26 Comment:** Commenters recommended that the Trustee Council SOP require each TIG to develop common approaches, coordinated timelines, and resources for engaging the public in developing draft restoration plans. The SOP should ensure inclusive participation and promote steps to reach populations such as low-income, minority, rural, and limited English proficiency communities and commercial and subsistence fishers.

**Response:** The Trustee Council SOP will provide consistency across TIGs in many areas, including organizational structure, decision-making, restoration planning procedures, financial management, and information management (including administrative record and data management). However, due to the varying amount of total restoration funds allocated to each TIG and the varied stakeholder interests of each Restoration Area, flexibility is required for each TIG to develop restoration planning timelines and engagement procedures that are most suitable for their specific needs. The Trustees will remain committed, as they have through Early Restoration public meetings, to promoting participation by limited English proficiency

communities. Further, the public engagement section of the Trustee Council SOP will provide for additional transparency during the restoration planning process and provide for additional public engagement, which would encourage and permit inclusive participation of all members of the public, including low-income, minority, and rural communities. Each TIG may also develop additional transparency and engagement procedures that help target their varied stakeholder interests.

- 7-27 Comment:** One commenter supported the Trustees' Monitoring, Adaptive Management, and Administrative Oversight goal, but requested that information and reporting be made available to the public in layman's terms so that the Trustees would be able to document the positive outcomes of the DWH NRDA restoration program. Another commenter suggested that restoration outcomes and progress toward restoration goals be communicated to the public every three years. They suggested holding an annual symposium at which the results of restoration and status of injured resources and the larger Gulf ecosystem could be shared with the public.

**Response:** The Trustees strive to provide publicly distributed information in clear, concise language that is simple and easy to understand. The Trustees will make restoration progress information available to the public at least annually. Additionally, the Trustees have committed to one public Trustee Council meeting per year where each TIG would provide updates on the status of their restoration planning and implementation (see Section 7.7).

- 7-28 Comment:** Commenters expressed the need for open and transparent processing of Trustee work, especially as the Trustees act on behalf of the public as beneficiaries. Specific suggestions and requests for additional transparency included developing criteria for restoration project selection, allowing public submittal of restoration project ideas, ensuring and encouraging public comment on restoration plans from all parties, and continuing to keep the public updated on the status of restoration plan development.

**Response:** The Trustees understand their responsibility to act on behalf of the public as beneficiaries of the settlement funds, and they recognize the need to clarify how public transparency will be facilitated throughout implementation of this restoration program. Although each TIG's public transparency during restoration planning will differ (as described in response to comment 7-11, the Trustee Council SOP will address minimum and common transparency steps that will be taken during the restoration planning process. Further, Section 7.3 has been revised to include the Trustees' commitment to public transparency at certain restoration planning milestones. As described in Chapters 5 and 6, OPA already provides a minimum and consistent set of evaluation standards that must be evaluated for each restoration alternative (OPA Section 990.54). As described in Section 7.3, the Trustees will continue to accept public submittal of restoration project ideas and have further committed to providing context in each restoration plan to describe to the public which Restoration Types will be the focus of each TIG's planning for a specified timeframe. Each plan developed by the TIGs will be made available for public review and comment, and the Trustees will commit to public engagement with the TIG during restoration plan public meetings. Finally, Chapter 7 describes how the Trustees will keep the public up to date on the status of restoration plan development

and implementation, including providing the public with access to project reporting on an annual basis, access to project and resource-specific monitoring data funded under this Consent Decree, and an opportunity to comment on adaptive management activities specifically proposed in restoration plans. This information, in addition to other project updates and Trustee Council or TIG announcements, will be provided through the Trustee Council website. The minimum set of project selection criteria are described in Section 5.4.7.

- 7-29 Comment:** Commenters requested that the Trustees establish additional mechanisms for the public to participate collaboratively with the Trustees. Specific recommendations included allowing public input on SOP (addressed in response to comment 7-24), holding regular public meetings to update restoration status and seek public input, conducting focus groups with specific communities (e.g., NGOs, fishing communities, long-standing citizen groups, and small, minority/underserved populations), opening Trustee Council and TIG meetings to the public, including Gulf education and outreach expertise in the decision-making process, and including the public in monitoring and adaptive management processes (addressed separately).

**Response:** The Trustees are committed to providing the opportunity for additional engagement with the public by 1) holding one public Trustee Council meeting per year, where each TIG will provide an update on the status of their restoration planning, implementation, and monitoring/adaptive management, and where there will be opportunity for public comment, and 2) having each TIG hold at least one public meeting per year, depending on each TIG's restoration planning cycle, to discuss the status of their restoration planning, upcoming restoration planning (including the Restoration Types that the TIG will focus on for a specified timeframe), and where there will be an opportunity for public comment and input. Public review and comment that is inherent through the requirements of OPA for every draft restoration plan. Further, the Trustees recognize the value that local communities, NGOs, citizen groups, and others can provide when developing restoration projects and may coordinate with specific communities and other groups when developing specific restoration projects. Additionally, the Trustees commit to providing the public with access to project and resource-specific monitoring data funded under this Consent Decree, and an opportunity to comment on adaptive management activities specifically proposed in restoration plans. This information, in addition to other project updates and Trustee Council or TIG announcements, will be provided through the Trustee Council website. Changes were made to Sections 7.3 and 7.7.1, to reflect the public engagement described in this response.

- 7-30 Comment:** One commenter stated that they appreciate the opportunity that they have been afforded with their Florida Trustees to suggest projects.

**Response:** The Trustees appreciate the recognition of our public involvement to date and look forward to providing the public with continued opportunities to participate in the DWH NRDA process in the future.

- 7-31 Comment:** Commenters urged the Trustees to consider increasing the amount allocated to the Unknown Conditions TIG.

**Response:** The allocation of \$700 million to the Unknown Conditions and Adaptive Management TIG is intended as a minimum reservation of funds for those purposes. This allocation is not the only mechanism the Trustees have to respond to unexpected circumstances that impair the ability to meet restoration objectives. The Trustees intend to employ adaptive management in implementing restoration projects, and agree that funds allocated to any Restoration Type may also be used for that purpose. Further, the structure of the restoration program—involving implementation over 15+ years—facilitates the Trustees’ ability to recognize, adapt to, and respond to changing or previously unknown conditions as they arise. The Trustees consequently believe that the minimum allocation of \$700 million to Unknown Conditions and Adaptive Management, when combined with this broader ability to address conditions that are currently unknown or undeveloped, provides the funds reasonably needed to address these circumstances.

- 7-32 Comment:** Commenters request that the Trustees clearly define what constitutes an “unknown condition.” Commenters also urged the Trustees to develop criteria for access to funding in the Unknown Conditions and Adaptive Management TIG and better describe how decisions will be made about the use of those funds. Commenters urged the Trustees to base decisions about the use of Unknown Conditions and Adaptive Management TIG funds on scientific information, including restoration or other long-term monitoring outcomes that provide evidence of unforeseeable conditions, such as additional injury, that could not be accounted for during restoration planning. Commenters expressed concern that a lack of clear scientifically based criteria to access funds may incentivize their early use, thus preventing them from accumulating all possible interest. Early use may also deplete funds available to address new injuries or unknown conditions before they are fully understood. Commenters urged the Trustees not to rely on Unknown Conditions and Adaptive Management funds to account for reasonably foreseeable future environmental conditions as they are currently understood. Commenters suggested that the Trustees specify the process that this TIG will use to identify and prioritize unforeseen needs as they accrue.

**Response:** Section 7.2 states that unknown conditions are injuries or conditions that were unanticipated or unknown when this PDARP/PEIS was finalized, and the Trustees believe this definition is sufficient at this time. The Trustees recognize there are existing conditions that can foreseeably be incorporated into restoration planning and decision-making (e.g., relative sea level rise). The Unknown Conditions and Adaptive Management funding is therefore set aside for the purpose of addressing conditions that are not currently known and that may be identified through monitoring and analysis conducted under this restoration program. Under the Consent Decree, the Trustees may begin seeking payment from BP for unknown conditions no earlier than January 1, 2026. In addition, the Trustees agree with the commenter that in order to properly address previously unknown conditions, sufficient information and data would be required, including monitoring data gathered by the other TIGs, to adequately understand the previously unknown conditions before selecting restoration measures.

The Trustees will incorporate the best available science into project selection, design, and implementation, including consideration of reasonably foreseeable future environmental

conditions. By doing so, the Trustees will strive to ensure that funds from the Unknown conditions TIG are not needed to address or adaptively manage for future environmental conditions that could reasonably be predicted at the time of project implementation. Decisions on utilizing funds under the Unknown Conditions and Adaptive Management TIG will be informed by monitoring data gathered across TIGs and by reviewing any available scientific and/or supporting information that documents unforeseen conditions. Specific procedures will be developed in the future to guide Trustees' decisions on the use of the Unknown Conditions and Adaptive Management allocation, and they are expected to be part of a future Trustee Council SOP update. Unknown Conditions funds would not be accessed until such time that those procedures are developed, which has been clarified in Section 7.5.3.

- 7-33 Comment:** Commenters request that the Trustees continue to track resource recovery by continuing assessment monitoring of key resources—for example, data-poor resources and/or resources with unquantified or underestimated injuries.

**Response:** While the Trustees do not intend to continue to explicitly assess injuries, they will determine priority information gaps at project, resource, and cross-resource levels in support of restoration decisions. This information, along with other information from other Gulf programs, will build the body of knowledge needed to improve the Trustees' understanding of status and trends for resources injured by the DWH incident. For example, monitoring and targeted scientific support will be conducted to monitor restoration projects, inform restoration planning, adaptively manage restoration efforts, and evaluate recovery progress.

- 7-34 Comment:** Commenters requested additional details about the Trustees' data management roles and responsibilities, including clarifying the relationship between the Restoration Management Portal, the DIVER interface, and Gulf-wide environmental data management, and identifying additional details of the data management framework and how it would work across Gulf restoration funding mechanisms. Commenters also encouraged the Trustees to tightly coordinate data management efforts across Restoration Areas and other restoration programs.

**Response:** The DIVER system houses the Restoration Management Portal and will be used as the platform for the Gulf-wide environmental data management system; thus they are all part of the same system and are built on the same software platforms. References to the Restoration Management Portal in the PDARP/PEIS have been changed to "DIVER Restoration Management Portal" to clarify the system relationship. This system will be used to support the maintenance, integration, and sharing of DWH NRDA data in accordance with applicable federal data management standards and archiving policies. The Trustees intend to use this platform to track and communicate restoration work conducted by the Trustees to the public. The DIVER system can support data integration and sharing across a variety of data sources. The Trustees will coordinate with the RESTORE and NFWF GEBF programs to identify opportunities for data collaboration.

### 8.3.7.2 Financial Management

- 7-35 Comment:** A commenter expressed concern that the allocation of funding for Mississippi is too low.

**Response:** The Trustees conducted a detailed Natural Resource Damage Assessment to determine the nature, degree, geographic extent, and duration of injuries to address both injuries and the resources they provide to the public. Because of the vast scale of the injuries and the potentially affected resources, the Trustees evaluated injuries to a set of representative habits, communities, species and ecological processes. Mississippi’s share of the proposed total settlement was based on the injury assessment and restoration planning process, including allocations to Restoration Areas and Restoration Types, as explained in response to comment 7-44.

- 7-36 Comment:** Numerous commenters expressed concern that restoration of Open Ocean resources will be undermined by allowing funds to be spent on unrelated projects and administrative matters. Commenters expressed concern that all federal administrative, oversight, and preliminary planning activities in all Restoration Areas will be expended from the \$150 million in administration and oversight funds allocated to the Open Ocean TIG, and further requested that all federal administration and oversight be capped at \$150 million, or even be reduced.

Commenters requested a more equitable distribution of administrative costs across all TIGs. Commenters were generally pleased that \$1.24 billion is allocated to the Open Ocean Restoration Area, but requested the Final PDARP/PEIS better define “Open Ocean” and ensure that Open Ocean funds are used for the purpose of restoring offshore ocean marine life and ecosystems. Other commenters felt it may be challenging to develop projects for the Open Ocean, and that there should be an allowance for reallocation to inland fisheries.

**Response:** The Trustees agree with the importance of creating an efficient decision-making structure that will use all available restoration funds efficiently and effectively, including funds allocated for administrative costs. The Consent Decree and the PDARP/PEIS specifically describe and allocate funds to administrative oversight to ensure that funds for restoration and for program administration are sufficient. The Trustees are committed to maintaining administrative costs within the provision of their respective administrative allocations, working to streamline efforts and employ efficiencies across Restoration Area operations. In many cases, the Trustees expect to utilize the same core support staff for many Trustee Council and TIG operations to bring continuity and efficiency to restoration implementation across the Restoration Areas. While it is not possible to know at the beginning of this multi-year restoration process exactly how much administrative funding will be required over the lifespan of the Trustees’ work, the Trustees anticipate that the present administrative allocations are sufficient for the duration of the program. In the event that an allocation adjustment is considered necessary, Trustees, upon consensus agreement, may amend the Restoration Plan, as provided in Consent Decree Appendix 2, Section 3.6. Such changes are subject to public review and comment according to the OPA regulations and may also require court approval, depending on the change. The Trustees believe the administrative oversight and comprehensive planning allocation in the Draft PDARP/PEIS is equitable and did not make changes to this funding in the Final PDARP/PEIS. The definition of “Open Ocean” likewise remains unchanged, as the Trustees believe this Restoration Area was sufficiently described in the Draft PDARP/PEIS. Regarding the concern of federal administrative funding drawing from the Open Ocean allocation, the federal

Trustees prefer the proposed construct, given that the Open Ocean Restoration Area is composed of only federal Trustees. The total amount of Trustee administrative funds was added to the total funding required to complete the body of restoration work presented within this PDARP/PEIS. Where the administrative funds are reflected within the Consent Decree, Appendix 2, Table 1, is a matter of financial tracking efficiency and in no way affects or reduces the funding purposed for Restoration Types within any of the Restoration Areas. The Trustees believe that this funding structure allows for efficiency by the federal Trustees.

**7-37 Comment:** Commenters expressed concern with some of the specific Restoration Types included in the Open Ocean Restoration Areas. First, commenters expressed a concern that several Early Restoration projects (\$22 million) aimed at Enhanced Recreational Opportunities were grouped into the Early Restoration allocation for the Open Ocean TIG, because this could set a precedent for future recreational use projects being considered using funds allocated to the Open Ocean TIG. Second, some commenters stated that certain Restoration Types (i.e., Gulf sturgeon) do not fit into the category of Open Ocean. Further, some commenters requested a change in the definition of the Open Ocean Restoration Area if the aforementioned projects were not accounted for in a different Restoration Area.

**Response:** As stated in Section 5.10.4 (footnote #10) of the Draft PDARP/PEIS, “The Open Ocean Restoration Area includes four Early Restoration projects that were approved in Phases III and IV for \$22,397,916 million for restoration on federally managed lands. These projects are reflected in Open Ocean for purposes of Early Restoration accounting. For purposes of subsequent project identification and selection associated with this Draft PDARP/PEIS, the remaining Open Ocean funding is allocated to fish and water column invertebrates, sturgeon, sea turtles, marine mammals, birds, and mesophotic and deep benthic communities.” The accounting for these projects against the Open Ocean Restoration Area will not establish a precedent for future recreational projects by the Open Ocean TIG because there has been no additional funding allocated to that Restoration Type within the Open Ocean Restoration Area. Further, the Early Restoration projects in question are all on federally managed lands or sanctuaries that were injured by the spill. Those injuries were not only to the natural resources themselves; the Trustees also documented adverse impacts on the public’s use and enjoyment of those areas. For that reason, it is appropriate to account for projects in the Open Ocean Restoration Area to enhance public access or enjoyment of those resources. In addition, because the injuries occurred on federally managed areas and federal Trustees are taking the lead on the restoration projects in question, it is appropriate, in terms of efficiency, to implement these projects through the Open Ocean TIG, which consists of the federal Trustees. Similarly, Gulf sturgeon is included in this allocation due to the federal management responsibility for this species in both marine and freshwater environments.

It should also be noted that the Open Ocean Restoration Area does not allocate any funding for recreational enhancement projects other than those selected in Early Restoration. This is also reflected in the definition of the Open Ocean Restoration Area, which is for resources “primarily,” but not “exclusively,” “in the ocean.” See Consent Decree Appendix 2, Section 2.1.1. Finally, the location of the injury to natural resources does not always correspond to the

location of appropriate projects for restoring those resources. While this settlement does not include any decisions about particular projects, some portion of Open Ocean restoration projects to address offshore injuries may be partially or entirely implemented in nearshore or shoreline areas, owing to the complex interactions between natural resources offshore and close to shore.

The Trustees believe that the Final PDARP/PEIS and the allocation table set sufficient limits on the proper use of funds allocated to the Open Ocean Restoration Area, and that additional or modified definition of this TIG is not required.

**7-38 Comment:** Commenters expressed concern that administrative costs will be extremely costly. Commenters requested the Final PDARP/PEIS clarify the intended use of the administrative oversight and comprehensive planning allocations. Commenters raised concerns and confusion on the extent of administrative support for “other” TIGs that will come out of the Open Ocean Restoration Area and questioned whether all administrative funding is coming out of the Open Ocean TIG. Specific concerns raised by commenters noted that operating and coordinating the activities of nine Trustee Councils, rather than one, multiplies the functional administrative needs and substantially increases the costs of the decision-making system. Additionally, commenters noted that all four federal Trustees (DOI, NOAA, USDA, and EPA) will sit on all eight TIGs, and each must be prepared to staff all eight TIGs, plus the primary Trustee Council, for the next decade and a half. Commenters asked how the federal and state Trustees will cover the costs of maintaining the functionality of nine Trustee bodies, instead of one, for well over a decade, and requested a description of what will happen if and when the administrative costs exceed the amount allocated in the Consent Decree. Commenters also requested an administrative and oversight breakdown from the Trustees to ensure that each federal and state Trustee would be able to meaningfully participate in each TIG over the duration of the restoration program. Specifically, some commenters requested that the first restoration plans developed in each TIG include a financial plan that details how the TIGs will use the administrative and planning allocation over the lifetime of the program. Commenters recommended that these financial plans make clear whether staff payments will be derived only from this administrative allocation, or if the Trustees are envisioning charging staff time directly to projects. Commenters also recommended that the administrative funding be examined carefully throughout the restoration process to determine if more of the funding can be allocated to actual restoration activity.

**Response:** Chapter 7 states that the administrative funding for the federal Trustees will be from the Open Ocean Administrative Oversight and Comprehensive Planning allocation, which will be used to fund federal Trustee non-project-specific responsibilities on all TIGs and the Trustee Council. Chapter 7 also states that the state Trustees’ non-project-specific responsibilities on all TIGs and the Trustee Council will be funded from the state TIG Administrative Oversight and Comprehensive Planning allocation, not from the Open Ocean allocation. Section 7.2 was modified to reflect that federal Trustee involvement for certain administrative functions on behalf of the Trustee Council—such as the administrative record, coordinating Trustee Council meetings, data management, Trustee Council staffing, the Trustee Council website, and

coordination with other Gulf of Mexico restoration programs—would be funded out of the Regionwide TIG, not the Open Ocean Administrative Oversight and Comprehensive Planning allocation. The Trustees believe that the proposed governance structure provides the efficiency and effectiveness needed to achieve sound restoration planning consistent with the goals established in the Final PDARP/PEIS, and that the costs of program administration were adequately considered in establishing the allocations.

Both federal and state Trustees will participate in project planning activities within their respective Restoration Areas, as defined in Chapter 7. Project-specific planning activities may be funded out of the Restoration Type allocations in which the project applies and not out of general Trustee administrative allocations. The point at which Trustee participation in a project may be considered a project cost and no longer supported from Trustee administration has been clarified in Section 7.3.1.

The Trustees acknowledge that the budget for administrative work is a stringent one and will require careful management. But, unless and until events demonstrate otherwise, this course fosters the Trustees' goal of funding as much on-the-ground restoration as practicable. While the new Trustee organizational structure is more complex than a single trustee council, it is more efficient because every Trustee is no longer required to participate in the development and implementation of every restoration project. The Trustees do not intend to make detailed financial plans available in each TIG's first restoration plan; however, those subsequent restoration plans and the Trustee Council website will provide the public with information on expenditures to date to provide financial context for restoration decisions. At certain points during implementation of this restoration program, the Trustees will evaluate the use of administrative funds to adjust as needed to account for 15 or more years of program implementation. Section 7.3.3 has been revised to reflect that the Trustees will evaluate progress of the Monitoring, Adaptive Management, and Administrative Oversight goal to consider whether adjustments to Trustee agency resources and expenditures are needed to accomplish the requirements of the PDARP/PEIS.

- 7-39 Comment:** One commenter did not think that funds for monitoring and adaptive management should be grouped with administrative costs with no specific budget because it will allow very little funding to go toward monitoring the Gulf. A specific, sufficient monitoring fund (e.g., 15 percent of the funds) would help alleviate this problem in the future.

**Response:** As required by OPA and NEPA (15 CFR § 990 and 42 USC § 4321, et seq.), the Trustees developed and evaluated alternatives for comprehensive restoration planning and determined the impact of the selected alternative. As a result, the Trustees determined that a comprehensive ecosystem-wide programmatic restoration plan was warranted. That plan is designed to achieve five overarching goals including restoring and conserving habitat; restoring water quality; replenishing and protecting coastal and marine resources; providing and enhancing recreational opportunities; and providing for monitoring, adaptive management, and oversight of restoration. Although monitoring and adaptive management is grouped with the goal of administrative oversight, within that goal there are specific and separate allocations for monitoring and adaptive management that are distinct from the funds for administrative

oversight within each Restoration Area. As described in Chapter 7, moving funds between Monitoring and Adaptive Management and Administrative Oversight within any Restoration Area would require either public notification or a revised restoration plan that is subject to public comment, depending on the amount of funds that would be moved.

- 7-40 Comment:** The Trustee Council and TIGs should ensure adequate funding for public engagement. In particular, the Trustee Council should consider allocating a portion of the resources currently committed for administration under the Regionwide TIG to promoting public engagement across TIGs.

**Response:** The Trustees are committed to providing adequate opportunities for public engagement at both the Trustee Council and TIG level. As with other administrative activities conducted by and on behalf of the Trustee Council, funding for Trustee Council public engagement opportunities will be from the Regionwide Administrative Oversight and Comprehensive Planning allocation. Engagement opportunities provided by each TIG will be funded from the Administrative Oversight and Comprehensive Planning allocation of each respective TIG. Other Trustee Council administrative functions funded out of the Regionwide TIG are described in Chapter 7 and the response to comment 7-38, above.

- 7-41 Comment:** Commenters requested that the Trustees ensure that financial accountability and oversight measures are in place to make sure the settlement money goes where intended, and that projects are completed and provide the results anticipated. Commenters requested the PDARP/PEIS commit to audits (perhaps by GAO) and to making audits available to the public in a timely manner.

**Response:** The Trustees will continue to maintain financial accountability and ensure that funds are spent appropriately in each TIG through formal financial audits that will be conducted on a regular basis, as specified in Chapter 7 and required within the proposed Consent Decree. The Trustees currently follow a set of financial management SOP, which are being updated as part of the Trustee Council SOP, to include, in part, a common scope and frequency for financial audits. The commitment to audits and to making final audit reports available to the public within the Administrative Record was established in the Draft PDARP/PEIS and remains in the Final PDARP/PEIS.

- 7-42 Comment:** Commenters requested mechanisms be identified to ensure large ecosystem scale projects can be conducted. Suggested mechanisms were making funds available earlier in order to allow for larger restoration projects with ecosystem-wide benefits to be considered sooner, including the use of bonds and other mechanisms to allow expenditure of funds sooner; ensuring the project selection system accommodates allocation of multi-year funding, including staging projects over time, allowing contribution of funds from multiple TIGs (federal and state Restoration Areas) to establish larger ecosystem-scale projects; and providing clear mechanisms to combine funding across geographic boundaries. Comments specific to the structure of RESTORE funds were also received.

**Response:** As stated in the Consent Decree, “[t]he Trustee Implementation Group for each Restoration Area may agree on a different allocation of funds to the Restoration Types, consistent with fully funding all of the Restoration Type allocations over the life of the payment schedule.” Further, Chapter 7 of the PDARP/PEIS states that “TIGs have differing amounts of total restoration dollars available annually. Considering its respective payment schedule, each TIG can determine a project planning and funding schedule that most appropriately benefits the Restoration Types under the TIGs purview.” Whereas an earlier payment schedule is not possible without changes to the Consent Decree, the restoration planning flexibility at the Restoration Area level will allow the TIGs to make the decisions to focus certain annual payouts on specific Restoration Types and to stage multi-year projects (e.g., one plan includes the Engineering and Design phase and a future plan includes the construction phase of that project), if needed. At this time, the Trustees have not fully considered if and how the use of bonds could be appropriate; however, the Trustees believe the restoration planning flexibility and the ability to leverage funds across the NFWF GEBF and RESTORE Act will allow the Trustees to consider and implement larger, ecosystem-scale projects. The Regionwide TIG will function across geographic boundaries with representatives from all federal and state Trustees. As such, this TIG has been allocated funding to support certain Restoration Types and will play an essential role in regional restoration planning and implementation, which may be facilitated by Restoration Type funding from other TIGs where projects may be located. Note that comments on the structure of RESTORE Act funds are not comments on the PDARP/PEIS and therefore are appropriately not addressed here.

- 7-43 Comment:** Commenters requested additional information regarding the interest earned and its appropriate uses, particularly clarifying the distribution of interest on the \$7.1 billion as described in the Consent Decree. One commenter asked, “One of the questions that we have about that \$700 million is, is there interest? Does the \$700 million go into the bank today so that that \$700 million can become something big?”

**Response:** Interest accrual and use of interest are described in Chapter 7 of the PDARP/PEIS and the Consent Decree. Interest will be earned in two places. Firstly, BP must pay interest on the unpaid amounts of the \$7.1 billion in natural resource damages. This interest will be paid into the Unknown Conditions Restoration Area as stated in paragraph 21 of the Consent Decree. Secondly, interest will accrue on funds paid into each TIG’s NRDAR sub-account. As described in Chapter 7, interest earned on TIG NRDAR sub-account funds can be used by the respective TIG for restoration planning, restoration implementation, and/or administrative oversight and comprehensive planning; however, any such use of these funds would be by consensus of the TIG, as described in the decision-making section of Chapter 7. Further, any use of such interest funds for restoration planning would follow the restoration planning procedures, including public engagement and transparency, outlined in Section 7.3. Regarding the up to \$700 million for the Unknown Conditions and Adaptive Management allocation, it is a provision specifically addressed in the proposed Consent Decree, Paragraph 21. The specific amount depends on when the Trustees request the amounts be paid, which allows the Trustees to make decisions about how to best manage and allocate the money.

**7-44 Comment:** Commenters stated that amount received under this settlement is too low. Additionally, some commenters expressed concern over the amount of funds allocated to some Restoration Areas and to the specific funding allocated to certain Restoration Types.

**Response:** Based on the Trustees' injury assessment and proposed ecosystem restoration approach, the Trustees are satisfied that if the settlement money is expended in conformance with the programmatic plan proposed in the PDARP/PEIS, the public will be made whole for the loss of natural resources and services suffered as a result of the DWH incident. Accordingly, the Trustees believe the settlement is fair, reasonable, and in the public interest.

OPA regulations (15 CFR § 990.25) allow the Trustees to settle claims for natural resource damages, "...at any time, provided that the settlement is adequate in the judgment of the Trustees to satisfy the goal of OPA and is fair, reasonable, and in the public interest." In this case, the Trustees have concluded that the settlement provides a reasonable approach to achieving the goals of OPA to make the public and the environment whole, is a fair and reasonable result, and advances the public interest.

To reach this conclusion, the Trustees followed requirements set forth in OPA to assess the injured natural resources and the impact of restoration planning. Following OPA regulations, the Trustees determined whether the DWH incident injured natural resources or impaired their services (15 CFR § 990.51) and quantified the degree and the spatial and temporal extent of those injuries and losses of services (15 CFR § 990.52). The assessment process and the determination and quantification of injuries and service losses are described in Chapter 4 of the PDARP/PEIS.

The Trustees used a variety of standard scientific approaches, appropriate to the nature of the resource and injury being studied, and relied on years of sampling, modeling, and analysis to determine that the DWH incident caused injuries to virtually all marine and estuarine habitats impacted by the oil, from the deep sea to the shoreline. As required by OPA and NEPA, the Trustees developed and evaluated alternatives for comprehensive restoration planning and determined the impact of the selected alternative (15 CFR § 990 and 42 USC § 4321, et seq.). As a result, the Trustees determined that a comprehensive ecosystem-wide programmatic restoration plan was warranted. That plan, as described and evaluated in Chapters 5 and 6 of the PDARP/PEIS, and to be managed as described in Chapter 7, is designed to achieve five overarching goals including restoring and conserving habitat; restoring water quality; replenishing and protecting coastal and marine resources; providing and enhancing recreational opportunities; and providing for monitoring, adaptive management, and oversight of restoration. The Trustees particularly considered the early investment of the funds toward ecosystem-wide restoration and avoidance of further degradation of resources in determining the adequacy of the settlement. Considering all these factors together, the Trustees are satisfied that the plan will achieve restoration goals and requirements.

To determine the allocations to Restoration Areas and Restoration Types, the Trustees followed requirements set forth in OPA to assess the injured natural resources and prepare a restoration plan. Following OPA regulations, the Trustees determined whether the DWH incident injured

natural resources or impaired their services (15 CFR § 990.51) and quantified the degree and the spatial and temporal extent of those injuries and loss of services (15 CFR § 990.52). The assessment process and the determination and quantification of injuries and service losses are described in Chapter 4 of the PDARP/PEIS. Whereas the comments related to Restoration Area and Restoration Type allocations are logical suggestions for alternative ways to allocate the funds, the Trustees believe that the allocation in the Consent Decree and PDARP/PEIS is the best and most appropriate way to allocate the funds. In essence, the alternative allocations presented in the comments would prefer “Alternative B” (the alternative of putting more money into specific animal species or resources and less money into the ecosystem- or habitat-based approach under Alternative A). Alternatives A and B are both valid approaches to restoration of the injured natural resources; however, the state and federal Trustees examined both of these alternatives and believe that Alternative A is the best alternative for addressing the injuries, particularly the ecosystem-level injuries, that resulted from the spill. Responses to specific Restoration Areas and Restoration Type allocations are below.

- 7-45 Comment:** Commenters expressed concern that NRDA money would not be used appropriately and expressed particular concern that there could be miscellaneous opportunities to siphon off funds from their intended purpose.

**Response:** The allocation table provided in Chapter 5 allocates funds to certain Restoration Types within each defined Restoration Area, to be administered by the TIG for that Restoration Area. The allocation table becomes mandated upon finalization of the Consent Decree. Chapter 7 and the Consent Decree describe each TIG’s decision-making process, which will ensure that funds are spent on projects fitting the Restoration Types allocated to each TIG. Additionally, as stated in Chapter 7, all Trustees within each TIG will follow the Financial SOP, which include provisions for tracking expenditures of funds and for periodic audits to ensure that funds are used appropriately.

- 7-46 Comment:** Commenters expressed concern with Alabama’s current plan for the use of funds received from the settlement, with specific reference to an article by Mr. Dute on <http://www.al.com>. Commenters expressed that none of the money should go the State of Alabama General Fund.

**Response:** The Trustees determined that the proposed settlement and associated governance procedures will provide a reasonable and effective mechanism for restoring, rehabilitating, replacing, or acquiring the equivalent of natural resources or services that were injured or lost as a result of the spill, as required by OPA. Restoration projects will be developed by the Alabama TIG and a restoration plan (or plans) will be published for public review and comment. Overall, the proposed process ensures that the OPA settlement funds will be used for effective future restoration and protection of coastal Alabama’s natural resources and the services that they provide, while providing the public with the opportunity to comment on the development of future project-specific restoration plans.

The additional settlement funds discussed within the referenced article are not part of the Natural Resource Damage settlement, are not governed by the OPA process, and are therefore subject to different legal standards regarding how they may be spent.

**7-47 Comment:** One commenter expressed concern with Mississippi's future use of money, stating that it should be spent helping put fishers back to work and that money should be used wisely on the coast.

**Response:** Restoration projects in the State of Mississippi will comply with hiring policies established by the Mississippi Jobs First Act, Miss Code Ann. § 31-5-37, which, among other things, requires contractors constructing restoration projects to outline an employment plan in bid submissions. Further, this Act requires that from the date the written notice of the contract award is received and until ten (10) business days after receipt of the employment plan by the Mississippi Department of Employment Security, the contract shall not hire any personnel to fill vacant positions necessary for the restoration project, except verified residents of the State of Mississippi.

**7-48 Comment:** One commenter questioned how Louisiana would use the future funds and stated that there are plans to construct a highway and fund the state government rather than restoring the coast.

**Response:** Under OPA, the Trustees are required to consider restoration alternatives that address injured resources. This PDARP/PEIS proposes implementation of an ecosystem restoration plan that allocates funding to specific Restoration Types within specified Restoration Areas based on the assessment of the injured resources. The allocation table provided in Chapter 5 provides the allocation to each Restoration Type within each Restoration Area, including the allocation to the Louisiana TIG. Chapter 7 and the Consent Decree describe each TIG's decision-making process, which will ensure that funds are spent on projects fitting the Restoration Types allocated to each TIG.

### 8.3.7.3 Monitoring and Adaptive Management

**7-49 Comment:** Commenters requested that the Trustees develop monitoring and adaptive management standards/protocols as part of the Trustee Council standard operating procedures to ensure consistency in restoration monitoring and data management and sharing across all TIGs. This consistency is intended to allow the Trustees to compare and aggregate results and to more comprehensively evaluate restoration outcomes and resource recovery. Additionally, a recommendation was made that monitoring standards and metrics be consistent across all restoration programs in the Gulf of Mexico, and that the Trustees consider using previously existing monitoring, data sharing, and QA/QC standards, including the recommendations from the Gulf of Mexico Marine Mammal Research and Monitoring Meeting Summary Report, and the forthcoming recommendations from the National Research Council Committee on Effective Approaches for Monitoring and Assessing Gulf of Mexico Restoration Activities.

**Response:** The Trustee Council will develop standard operating procedures for monitoring and adaptive management in order to compare and aggregate results and to measure the collective

progress of restoration toward ecosystem goals. These standard operating procedures may include components such as minimum monitoring (e.g., core parameters) and data management (i.e. data standards), as mentioned in Appendix 5.E, and will be utilized by the TIGs as practicable and as defined in future TIG SOPs. As the Trustee Council develops and revises the monitoring and adaptive management standard operating procedures, they will consider previously existing monitoring data, data sharing, and QA/QC standards, as well as relevant external information (e.g., reports and recommendations from advisory bodies and nongovernmental, scientific, and regional organizations). As appropriate and beneficial to both programs, the Trustee Council will coordinate with the RESTORE Council and NFWF GEBF on the development of monitoring and data protocols. The Trustee Council will also identify and coordinate with other programs, as appropriate.

**7-50 Comment:** Commenters expressed strong support for the monitoring and adaptive management framework as laid out in the PDARP/PEIS. Specifically, commenters stressed the importance of developing monitoring and adaptive management plans concurrent with restoration plans, assessing recovery success, and ensuring transparency and public access to monitoring products and information.

**Response:** The Trustees appreciate the support for the monitoring and adaptive management approach outlined in the document. The Trustees acknowledge and agree that monitoring and adaptive management are important to ensure that restoration is science-based, responsive to changing conditions, and will ensure long-term benefits to the injured natural resources. The Trustees are exploring options to ensure transparency of their monitoring and adaptive management efforts and coordination among restoration efforts in the Gulf of Mexico. This may include activities such as development of a common public portal (the DIVER Restoration Management Portal) where monitoring data, research results, project information, and reports related to all activities undertaken through this restoration plan are made available in a single location. Additionally, the Trustees appreciate the importance of developing monitoring and adaptive management plans and budgets concurrent with restoration plans, as they have done in Early Restoration Phase IV and committed to in Appendix 5.E.

**7-51 Comment:** Commenters urged the Trustees to account for climate change and other foreseeable impacts on restoration projects during planning in order to ensure that projects are resilient and sustainable.

**Response:** The Trustees will need to consider many design criteria when developing and prioritizing future restoration projects, including external influential factors—such as relative sea level rise and climate change—that can affect the resilience and sustainability of projects. Specific techniques and projects, as well as design criteria, locations, and other factors, will be decided through subsequent TIG project selection processes and described in subsequent restoration plans.

As subsequent restoration plans are prepared consistent with this Final PDARP/PEIS, any project- or site-specific considerations related to climate change would be updated. Pursuant to CEQ-issued draft guidance to federal agencies on evaluating greenhouse gas emissions and the

impacts of climate change under NEPA, that NEPA analysis should consider the potential effects of a proposed action on climate change (using projected greenhouse gas emissions as a proxy for those effects) and the implications of climate change for the environmental effects of the proposed action (i.e., impacts with respect to how climate change may alter the effects of the proposed action).

- 7-52 Comment:** A commenter suggested that the Monitoring and Adaptive Management SOP should describe the process for incorporating monitoring and scientific support into restoration decision-making. The commenter suggested that the Monitoring and Adaptive Management SOP also describe how TIGs will coordinate resource and cross-resource level restoration planning, monitoring, adaptive management, and evaluation across TIGs.

**Response:** The Trustee Council monitoring and adaptive management SOP will describe the process by which monitoring and scientific support will be incorporated into restoration decision-making. In addition, the monitoring and adaptive management SOP will describe the mechanisms by which the TIGs will coordinate restoration monitoring and adaptive management that informs restoration planning and conduct monitoring data aggregation and analysis responsibilities, especially for Restoration Types that overlap geographic areas. The monitoring and adaptive management SOP will be a section of the Trustee Council SOP, and will be made available to the public.

- 7-53 Comment:** Commenters recommended the Trustees establish a Science Advisory Group to ensure that the ecosystem approach is achieved. Further, some commenters recommended that the Science Advisory Group work across funding streams (e.g., RESTORE, NFWF, NRDA). Some commenters also suggested that advisory bodies be used to review restoration plans for technical merit and consistency with other restoration plans and overall restoration goals.

**Response:** The Trustees are committed to informing restoration planning and adaptive management decisions using the best available science. In order to achieve this, the Trustees will continue to collaborate with subject matter experts and coordinate with other Gulf programs (e.g., RESTORE and NFWF) as needed to ensure the most informed restoration planning and adaptive management decisions are made. Edits have been made to Section 5.5.15.2, Section 5.E.3, and Section 7.5 to reflect this commitment to engagement with both internal and external scientific experts. However, because of the diversity of restoration and technical issues that will be faced over time, the Trustees will take a flexible approach to identifying and including the necessary expertise at various stages of restoration planning and implementation. The Trustees will bring in experts, as appropriate, to provide input to restoration planning, input to the development of monitoring and adaptive management priorities, and review of draft products for technical merit and consistency with overall restoration goals. The Trustees believe that this will be a more effective approach to infusing the needed subject matter expertise into the process than a formal Science Advisory Group or any other particular standing science advisory body.

- 7-54 Comment:** A commenter noted the Trustee Council should establish a Gulf-wide monitoring advisory group to prioritize and coordinate monitoring activities at the resource and cross-

resource level, and to inform best practices and methodologies; this group should consist of not only Trustee agency staff from each Restoration Area, but also non-Trustee experts and stakeholders (e.g., subject matter experts in academia or industry). One commenter also suggested creating a monitoring advisory group to track and coordinate monitoring efforts across Restoration Areas.

**Response:** Section 7.5 has been updated to indicate that the Trustees will establish a cross-TIG Monitoring and Adaptive Management working group that would support the Trustee Council in meeting its monitoring and adaptive management responsibilities by providing for coordination, among TIGs and across DWH restoration programs (e.g., RESTORE and NFWF) as appropriate, on monitoring, data management, and reporting efforts. Trustee agency representatives or their support staff may comprise the cross-TIG Monitoring and Adaptive Management working group. The Trustees continue to coordinate with non-Trustee and stakeholder technical experts on monitoring and adaptive management topics where Trustees determine appropriate. The roles, responsibilities, and funding will be further clarified in the Trustee Council SOP section on Monitoring and Adaptive Management, and the composition of the group could evolve through SOP updates as appropriate to ensure the monitoring and adaptive management framework established in the Final PDARP/PEIS is implemented effectively over time. Non-Trustee experts also will be able to participate in the monitoring and adaptive management process through the public participation mechanisms provided in the PDARP/PEIS and in the Trustee Council SOP.

**7-55 Comment:** While some commenters find the results presented in the PDARP/PEIS adequate for their stated purposes, those commenters noted that the PDARP/PEIS would benefit considerably from an independent peer review by scientific experts who were not involved in the underlying studies or in any aspect of the production of the PDARP/PEIS.

**Response:** The PDARP/PEIS was developed through a strong scientific collaborative process that brought subject matter experts from government agencies, nongovernmental organizations, and academia together to develop, implement, and analyze study results that form the basis for the PDARP/PEIS injury assessment. These scientific studies and analyses were subjected to multiple levels of independent peer review. Thus, the Trustees conclude that their data review, particularly for the injury assessment, was adequate for the intended purpose of preparing a PDARP/PEIS. As monitoring and adaptive management priorities and projects are funded in the future, the Trustees will consider whether independent peer review on those future restoration plans is necessary.

### 8.3.8 References

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